Sigma zapis, binomni teorem i matematička indukcija

Matematika za ekonomiste 1

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Sadržaj

Σ notacija

Σ notacija

$$\sum$$

Σ notacija

$\sum$ grčko slovo sigma

Σ notacija

$\sum$ grčko slovo sigma

a_1

Σ notacija

$\sum$ $\leftsquigarrow$ grčko slovo sigma

$a_1 + a_2$

Σ notacija

$\sum$ grčko slovo sigma

$a_1 + a_2 + a_3$

Σ notacija

$\sum$ grčko slovo sigma

$$a_1 + a_2 + a_3 + \cdots$$

Σ notacija

$\sum$ grčko slovo sigma

$$a_1 + a_2 + a_3 + \cdots + a_n$$

Σ notacija

$$\sum \leftsquigarrow \text{grčko slovo sigma}$$

$$a_1 + a_2 + a_3 + \cdots + a_n =$$

Σ notacija

$\sum$ grčko slovo sigma

$$a_1 + a_2 + a_3 + \cdots + a_n = \sum$$

Σ notacija

$\sum$ grčko slovo sigma

$$a_1 + a_2 + a_3 + \cdots + a_n = \sum_{k}$$

Σ notacija

$\sum$ grčko slovo sigma

$$a_1 + a_2 + a_3 + \cdots + a_n = \sum_k a_k$$

Σ notacija

$$\sum \leftarrow \text{grčko slovo sigma}$$

$$a_1 + a_2 + a_3 + \cdots + a_n = \sum_{k=1} a_k$$

Σ notacija

$\sum$ ← grčko slovo sigma

$$a_1 + a_2 + a_3 + \cdots + a_n = \sum_{k=1}^{n} a_k$$

Σ notacija

$\sum$

grčko slovo sigma

$$a_1 + a_2 + a_3 + \cdots + a_n = \sum_{k=1}^{n} a_k$$

$$a_1 + a_2 + a_3 + \cdots + a_n =$$

Σ notacija

$$\sum$$

grčko slovo sigma

$$a_1 + a_2 + a_3 + \cdots + a_n = \sum_{k=1}^{n} a_k$$

$$a_1 + a_2 + a_3 + \cdots + a_n = \sum_{i=1}^{n} a_i$$

Σ notacija

$\sum$ grčko slovo sigma

$$a_1 + a_2 + a_3 + \cdots + a_n = \sum_{k=1}^{n} a_k$$

$$a_1 + a_2 + a_3 + \cdots + a_n = \sum_{i=1}^{n} a_i$$

$$a_1 + a_2 + a_3 + \cdots + a_n =$$

Σ notacija

$\sum$ grčko slovo sigma

$$a_1 + a_2 + a_3 + \cdots + a_n = \sum_{k=1}^{n} a_k$$

$$a_1 + a_2 + a_3 + \cdots + a_n = \sum_{i=1}^{n} a_i$$

$$a_1 + a_2 + a_3 + \cdots + a_n = \sum_{\alpha=1}^{n} a_\alpha$$

prvi zadatak

Zadatak 1

Napišite sljedeće izraze pomoću Σ notacije:

a) $10 + 20 + 40 + \cdots + 5 \cdot 2^n$

b) $1^2 \cdot 2 + 2^2 \cdot 3 + 3^2 \cdot 4 + \cdots + n^2 \cdot (n+1)$

c) $3^2 \cdot 4 + 4^2 \cdot 5 + 5^2 \cdot 6 + \cdots + (n-2)^2 \cdot (n-1)$

d) $-4 - 8 - 12 - \cdots - 4k$

Rješenje

a)

$$10 + 20 + 40 + \cdots + 5 \cdot 2^n =$$

Rješenje

a)

$$10 + 20 + 40 + \cdots + 5 \cdot 2^n = \sum$$

Rješenje

a)

$$10 + 20 + 40 + \cdots + 5 \cdot 2^n = \sum_{i}$$

Rješenje

a)

$$10 + 20 + 40 + \cdots + 5 \cdot 2^n = \sum_{i}$$

$$5 \cdot 2^1$$

Rješenje

a)

$$10 + 20 + 40 + \cdots + 5 \cdot 2^n = \sum_{i}$$

$$5 \cdot 2^1 \quad 5 \cdot 2^2$$

Rješenje

a)

$$10 + 20 + 40 + \cdots + 5 \cdot 2^n = \sum_{i}$$

$$5 \cdot 2^1 \qquad 5 \cdot 2^2 \qquad 5 \cdot 2^3$$

Rješenje

a)

$$10 + 20 + 40 + \cdots + 5 \cdot 2^n = \sum_i 5 \cdot 2^i$$

$$5 \cdot 2^1 \quad 5 \cdot 2^2 \quad 5 \cdot 2^3$$

Rješenje

a)

$$10 + 20 + 40 + \cdots + 5 \cdot 2^n = \sum_{i=1} 5 \cdot 2^i$$

$$5 \cdot 2^1 \quad 5 \cdot 2^2 \quad 5 \cdot 2^3$$

Rješenje

a)

$$10 + 20 + 40 + \cdots + 5 \cdot 2^n = \sum_{i=1}^{n} 5 \cdot 2^i$$

$$5 \cdot 2^1 \quad 5 \cdot 2^2 \quad 5 \cdot 2^3$$

Rješenje

a)

$$10 + 20 + 40 + \cdots + 5 \cdot 2^n = \sum_{i=1}^{n} 5 \cdot 2^i$$

$$5 \cdot 2^1 \qquad 5 \cdot 2^2 \qquad 5 \cdot 2^3$$

b)

$$1^2 \cdot 2 + 2^2 \cdot 3 + 3^2 \cdot 4 + \cdots + n^2 \cdot (n+1) =$$

Rješenje

a)

$$10 + \underset{5\cdot 2^1}{\,}20 + 40 + \cdots + 5 \cdot 2^n = \sum_{i=1}^{n} 5 \cdot 2^i$$

$5 \cdot 2^1 \quad 5 \cdot 2^2 \quad 5 \cdot 2^3$

b)

$$1^2 \cdot 2 + 2^2 \cdot 3 + 3^2 \cdot 4 + \cdots + n^2 \cdot (n+1) = \sum$$

Rješenje

a)

$$10 + 20 + 40 + \cdots + 5 \cdot 2^n = \sum_{i=1}^{n} 5 \cdot 2^i$$

$$5 \cdot 2^1 \quad 5 \cdot 2^2 \quad 5 \cdot 2^3$$

b)

$$1^2 \cdot 2 + 2^2 \cdot 3 + 3^2 \cdot 4 + \cdots + n^2 \cdot (n+1) = \sum_{k}$$

Rješenje

a)

$$10 + 20 + 40 + \cdots + 5 \cdot 2^n = \sum_{i=1}^{n} 5 \cdot 2^i$$

$$5 \cdot 2^1 \quad 5 \cdot 2^2 \quad 5 \cdot 2^3$$

b)

$$1^2 \cdot 2 + 2^2 \cdot 3 + 3^2 \cdot 4 + \cdots + n^2 \cdot (n+1) = \sum_{k} k^2(k+1)$$

Rješenje

a)

$$10 + 20 + 40 + \cdots + 5 \cdot 2^n = \sum_{i=1}^{n} 5 \cdot 2^i$$

$$5 \cdot 2^1 \qquad 5 \cdot 2^2 \qquad 5 \cdot 2^3$$

b)

$$1^2 \cdot 2 + 2^2 \cdot 3 + 3^2 \cdot 4 + \cdots + n^2 \cdot (n+1) = \sum_{k=1} k^2(k+1)$$

Rješenje

a)

$$\underset{\substack{\downarrow\\ 5\cdot 2^1}}{10}+\underset{\substack{\downarrow\\ 5\cdot 2^2}}{20}+\underset{\substack{\downarrow\\ 5\cdot 2^3}}{40}+\cdots+5\cdot 2^n=\sum_{i=1}^{n}5\cdot 2^i$$

b)

$$1^2\cdot 2+2^2\cdot 3+3^2\cdot 4+\cdots+n^2\cdot(n+1)=\sum_{k=1}^{n}k^2(k+1)$$

Rješenje

a)

$$\underset{\substack{\downarrow \\ 5\cdot 2^1}}{10} + \underset{\substack{\downarrow \\ 5\cdot 2^2}}{20} + \underset{\substack{\downarrow \\ 5\cdot 2^3}}{40} + \cdots + 5\cdot 2^n = \sum_{i=1}^{n} 5\cdot 2^i$$

b)

$$1^2\cdot 2 + 2^2\cdot 3 + 3^2\cdot 4 + \cdots + n^2\cdot(n+1) = \sum_{k=1}^{n} k^2(k+1)$$

c)

$$3^2\cdot 4 + 4^2\cdot 5 + 5^2\cdot 6 + \cdots + (n-2)^2\cdot(n-1) =$$

Rješenje

a)

$$\underset{\substack{\downarrow \\ 5\cdot 2^1}}{10} + \underset{\substack{\downarrow \\ 5\cdot 2^2}}{20} + \underset{\substack{\downarrow \\ 5\cdot 2^3}}{40} + \cdots + 5\cdot 2^n = \sum_{i=1}^{n} 5\cdot 2^i$$

b)

$$1^2\cdot 2 + 2^2\cdot 3 + 3^2\cdot 4 + \cdots + n^2\cdot(n+1) = \sum_{k=1}^{n} k^2(k+1)$$

c)

$$3^2\cdot 4 + 4^2\cdot 5 + 5^2\cdot 6 + \cdots + (n-2)^2\cdot(n-1) = \sum$$

Rješenje

a)

$$\underset{\underset{5 \cdot 2^1}{\downarrow}}{10} + \underset{\underset{5 \cdot 2^2}{\downarrow}}{20} + \underset{\underset{5 \cdot 2^3}{\downarrow}}{40} + \cdots + 5 \cdot 2^n = \sum_{i=1}^{n} 5 \cdot 2^i$$

b)

$$1^2 \cdot 2 + 2^2 \cdot 3 + 3^2 \cdot 4 + \cdots + n^2 \cdot (n+1) = \sum_{k=1}^{n} k^2(k+1)$$

c)

$$3^2 \cdot 4 + 4^2 \cdot 5 + 5^2 \cdot 6 + \cdots + (n-2)^2 \cdot (n-1) = \sum_{k}$$

Rješenje

a)

$$10 + 20 + 40 + \cdots + 5 \cdot 2^n = \sum_{i=1}^{n} 5 \cdot 2^i$$

$$5 \cdot 2^1 \qquad 5 \cdot 2^2 \qquad 5 \cdot 2^3$$

b)

$$1^2 \cdot 2 + 2^2 \cdot 3 + 3^2 \cdot 4 + \cdots + n^2 \cdot (n+1) = \sum_{k=1}^{n} k^2(k+1)$$

c)

$$3^2 \cdot 4 + 4^2 \cdot 5 + 5^2 \cdot 6 + \cdots + (n-2)^2 \cdot (n-1) = \sum_{k} k^2(k+1)$$

Rješenje

a)

$$10 + 20 + 40 + \cdots + 5 \cdot 2^n = \sum_{i=1}^{n} 5 \cdot 2^i$$

$$5 \cdot 2^1 \qquad 5 \cdot 2^2 \qquad 5 \cdot 2^3$$

b)

$$1^2 \cdot 2 + 2^2 \cdot 3 + 3^2 \cdot 4 + \cdots + n^2 \cdot (n+1) = \sum_{k=1}^{n} k^2(k+1)$$

c)

$$3^2 \cdot 4 + 4^2 \cdot 5 + 5^2 \cdot 6 + \cdots + (n-2)^2 \cdot (n-1) = \sum_{k=3} k^2(k+1)$$

Rješenje

a)

$$10 + 20 + 40 + \cdots + 5 \cdot 2^n = \sum_{i=1}^{n} 5 \cdot 2^i$$

$$5 \cdot 2^1 \qquad 5 \cdot 2^2 \qquad 5 \cdot 2^3$$

b)

$$1^2 \cdot 2 + 2^2 \cdot 3 + 3^2 \cdot 4 + \cdots + n^2 \cdot (n+1) = \sum_{k=1}^{n} k^2(k+1)$$

c)

$$3^2 \cdot 4 + 4^2 \cdot 5 + 5^2 \cdot 6 + \cdots + (n-2)^2 \cdot (n-1) = \sum_{k=3}^{n-2} k^2(k+1)$$

Rješenje

a)

$$10 + 20 + 40 + \cdots + 5 \cdot 2^n = \sum_{i=1}^{n} 5 \cdot 2^i$$

$$5 \cdot 2^1 \qquad 5 \cdot 2^2 \qquad 5 \cdot 2^3$$

b)

$$1^2 \cdot 2 + 2^2 \cdot 3 + 3^2 \cdot 4 + \cdots + n^2 \cdot (n+1) = \sum_{k=1}^{n} k^2(k+1)$$

c)

$$3^2 \cdot 4 + 4^2 \cdot 5 + 5^2 \cdot 6 + \cdots + (n-2)^2 \cdot (n-1) = \sum_{k=3}^{n-2} k^2(k+1)$$

$$3^2 \cdot 4 + 4^2 \cdot 5 + 5^2 \cdot 6 + \cdots + (n-2)^2 \cdot (n-1) =$$

Rješenje

a)

$$10 + 20 + 40 + \cdots + 5 \cdot 2^n = \sum_{i=1}^{n} 5 \cdot 2^i$$

$$5 \cdot 2^1 \qquad 5 \cdot 2^2 \qquad 5 \cdot 2^3$$

b)

$$1^2 \cdot 2 + 2^2 \cdot 3 + 3^2 \cdot 4 + \cdots + n^2 \cdot (n+1) = \sum_{k=1}^{n} k^2(k+1)$$

c)

$$3^2 \cdot 4 + 4^2 \cdot 5 + 5^2 \cdot 6 + \cdots + (n-2)^2 \cdot (n-1) = \sum_{k=3}^{n-2} k^2(k+1)$$

$$3^2 \cdot 4 + 4^2 \cdot 5 + 5^2 \cdot 6 + \cdots + (n-2)^2 \cdot (n-1) = \sum$$

Rješenje

a)

$$10 + 20 + 40 + \cdots + 5 \cdot 2^n = \sum_{i=1}^{n} 5 \cdot 2^i$$

$$5 \cdot 2^1 \quad 5 \cdot 2^2 \quad 5 \cdot 2^3$$

b)

$$1^2 \cdot 2 + 2^2 \cdot 3 + 3^2 \cdot 4 + \cdots + n^2 \cdot (n+1) = \sum_{k=1}^{n} k^2(k+1)$$

c)

$$3^2 \cdot 4 + 4^2 \cdot 5 + 5^2 \cdot 6 + \cdots + (n-2)^2 \cdot (n-1) = \sum_{k=3}^{n-2} k^2(k+1)$$

$$3^2 \cdot 4 + 4^2 \cdot 5 + 5^2 \cdot 6 + \cdots + (n-2)^2 \cdot (n-1) = \sum_{k}$$

Rješenje

a)

$$10 + 20 + 40 + \cdots + 5 \cdot 2^n = \sum_{i=1}^{n} 5 \cdot 2^i$$

$$5 \cdot 2^1 \qquad 5 \cdot 2^2 \qquad 5 \cdot 2^3$$

b)

$$1^2 \cdot 2 + 2^2 \cdot 3 + 3^2 \cdot 4 + \cdots + n^2 \cdot (n+1) = \sum_{k=1}^{n} k^2(k+1)$$

c)

$$3^2 \cdot 4 + 4^2 \cdot 5 + 5^2 \cdot 6 + \cdots + (n-2)^2 \cdot (n-1) = \sum_{k=3}^{n-2} k^2(k+1)$$

$$3^2 \cdot 4 + 4^2 \cdot 5 + 5^2 \cdot 6 + \cdots + (n-2)^2 \cdot (n-1) = \sum_{k} (k-2)^2(k-1)$$

Rješenje

a)

$$10 + 20 + 40 + \cdots + 5 \cdot 2^n = \sum_{i=1}^{n} 5 \cdot 2^i$$

$$5 \cdot 2^1 \quad 5 \cdot 2^2 \quad 5 \cdot 2^3$$

b)

$$1^2 \cdot 2 + 2^2 \cdot 3 + 3^2 \cdot 4 + \cdots + n^2 \cdot (n+1) = \sum_{k=1}^{n} k^2(k+1)$$

c)

$$3^2 \cdot 4 + 4^2 \cdot 5 + 5^2 \cdot 6 + \cdots + (n-2)^2 \cdot (n-1) = \sum_{k=3}^{n-2} k^2(k+1)$$

$$3^2 \cdot 4 + 4^2 \cdot 5 + 5^2 \cdot 6 + \cdots + (n-2)^2 \cdot (n-1) = \sum_{k=5} (k-2)^2(k-1)$$

Rješenje

a)

$$10 + 20 + 40 + \cdots + 5 \cdot 2^n = \sum_{i=1}^{n} 5 \cdot 2^i$$

$$5 \cdot 2^1 \qquad 5 \cdot 2^2 \qquad 5 \cdot 2^3$$

b)

$$1^2 \cdot 2 + 2^2 \cdot 3 + 3^2 \cdot 4 + \cdots + n^2 \cdot (n+1) = \sum_{k=1}^{n} k^2(k+1)$$

c)

$$3^2 \cdot 4 + 4^2 \cdot 5 + 5^2 \cdot 6 + \cdots + (n-2)^2 \cdot (n-1) = \sum_{k=3}^{n-2} k^2(k+1)$$

$$3^2 \cdot 4 + 4^2 \cdot 5 + 5^2 \cdot 6 + \cdots + (n-2)^2 \cdot (n-1) = \sum_{k=5}^{n} (k-2)^2(k-1)$$

d)

$$-4 - 8 - 12 - \cdots - 4k =$$

d)

$$-4 - 8 - 12 - \cdots - 4k = -4$$

d)

$$-4 - 8 - 12 - \cdots - 4k = -4 + (-8)$$

d)

$$-4 - 8 - 12 - \cdots - 4k = -4 + (-8) + (-12)$$

d)

$$-4 - 8 - 12 - \cdots - 4k = -4 + (-8) + (-12) + \cdots$$

d)

$$-4 - 8 - 12 - \cdots - 4k = -4 + (-8) + (-12) + \cdots + (-4k)$$

d)

$$-4-8-12-\cdots-4k=-4+(-8)+(-12)+\cdots+(-4k)=$$

$$=\sum$$

d)

$$-4 - 8 - 12 - \cdots - 4k = -4 + (-8) + (-12) + \cdots + (-4k) =$$

$$= \sum_{j}$$

d)

$$-4 - 8 - 12 - \cdots - 4k = -4 + (-8) + (-12) + \cdots + (-4k) =$$

$$= \sum_{j} (-4j)$$

d)

$$-4 - 8 - 12 - \cdots - 4k = -4 + (-8) + (-12) + \cdots + (-4k) =$$

$$= \sum_{j=1} (-4j)$$

d)

$$-4-8-12-\cdots-4k=-4+(-8)+(-12)+\cdots+(-4k)=$$

$$=\sum_{j=1}^{k}(-4j)$$

drugi zadatak

Zadatak 2

Napišite sljedeće izraze bez Σ notacije:

a) $\sum_{\alpha=3}^{5} \alpha^2$

b) $\sum_{i=1}^{n} 2^{i+2}$

c) $\sum_{k=5}^{n+2} (2k-1)$

d) $\sum_{j=2}^{n-1} a_k$

Rješenje

a) $\sum_{\alpha=3}^{5} \alpha^2 =$

Rješenje

a) $\sum_{\alpha=3}^{5} \alpha^2 = 3^2$

Rješenje

a) $$\sum_{\alpha=3}^{5} \alpha^2 = 3^2$$

$\alpha = 3$

Rješenje

a) $\displaystyle\sum_{\alpha=3}^{5} \alpha^2 = 3^2 +$

$\alpha = 3$

Rješenje

a) $\sum_{\alpha=3}^{5} \alpha^2 = 3^2 + 4^2$

$\alpha = 3$

Rješenje

a) $\sum_{\alpha=3}^{5} \alpha^2 = \underbrace{3^2}_{\alpha=3} + \underbrace{4^2}_{\alpha=4}$

Rješenje

a) $\sum_{\alpha=3}^{5} \alpha^2 = \underbrace{3^2}_{\alpha=3} + \underbrace{4^2}_{\alpha=4} +$

Rješenje

a) $\sum_{\alpha=3}^{5} \alpha^2 = 3^2 + 4^2 + 5^2$

$\alpha = 3 \quad \alpha = 4$

Rješenje

a) $$\sum_{\alpha=3}^{5} \alpha^2 = 3^2 + 4^2 + 5^2$$

$$\alpha = 3 \qquad \alpha = 4 \qquad \alpha = 5$$

Rješenje

a) $$\sum_{\alpha=3}^{5} \alpha^2 = \underset{\alpha=3}{3^2} + \underset{\alpha=4}{4^2} + \underset{\alpha=5}{5^2} = 50$$

Rješenje

a) $$\sum_{\alpha=3}^{5} \alpha^2 = 3^2 + 4^2 + 5^2 = 50$$

$$\alpha = 3 \quad \alpha = 4 \quad \alpha = 5$$

b) $$\sum_{i=1}^{n} 2^{i+2} =$$

Rješenje

a) $$\sum_{\alpha=3}^{5} \alpha^2 = 3^2 + 4^2 + 5^2 = 50$$

$\alpha = 3$ $\alpha = 4$ $\alpha = 5$

b) $$\sum_{i=1}^{n} 2^{i+2} = 2^3$$

Rješenje

a) $$\sum_{\alpha=3}^{5} \alpha^2 = \underset{\substack{\uparrow \\ \alpha = 3}}{3^2} + \underset{\substack{\uparrow \\ \alpha = 4}}{4^2} + \underset{\substack{\uparrow \\ \alpha = 5}}{5^2} = 50$$

b) $$\sum_{i=1}^{n} 2^{i+2} = \underset{\substack{\uparrow \\ i = 1}}{2^3}$$

Rješenje

a) $$\sum_{\alpha=3}^{5} \alpha^2 = 3^2 + 4^2 + 5^2 = 50$$

$\alpha = 3 \quad \alpha = 4 \quad \alpha = 5$

b) $$\sum_{i=1}^{n} 2^{i+2} = 2^3 +$$

$i = 1$

Rješenje

a) $$\sum_{\alpha=3}^{5} \alpha^2 = 3^2 + 4^2 + 5^2 = 50$$

$\alpha = 3$ $\alpha = 4$ $\alpha = 5$

b) $$\sum_{i=1}^{n} 2^{i+2} = 2^3 + 2^4$$

$i = 1$

Rješenje

a) $$\sum_{\alpha=3}^{5} \alpha^2 = 3^2 + 4^2 + 5^2 = 50$$

$\alpha = 3 \quad \alpha = 4 \quad \alpha = 5$

b) $$\sum_{i=1}^{n} 2^{i+2} = 2^3 + 2^4$$

$i = 1 \quad i = 2$

Rješenje

a) $$\sum_{\alpha=3}^{5} \alpha^2 = 3^2 + 4^2 + 5^2 = 50$$

$$\alpha = 3 \quad \alpha = 4 \quad \alpha = 5$$

b) $$\sum_{i=1}^{n} 2^{i+2} = 2^3 + 2^4 +$$

$$i = 1 \quad i = 2$$

Rješenje

a) $$\sum_{\alpha=3}^{5} \alpha^2 = \underset{\alpha = 3}{3^2} + \underset{\alpha = 4}{4^2} + \underset{\alpha = 5}{5^2} = 50$$

b) $$\sum_{i=1}^{n} 2^{i+2} = \underset{i = 1}{2^3} + \underset{i = 2}{2^4} + 2^5$$

Rješenje

a) $$\sum_{\alpha=3}^{5} \alpha^2 = \underbrace{3^2}_{\alpha=3} + \underbrace{4^2}_{\alpha=4} + \underbrace{5^2}_{\alpha=5} = 50$$

b) $$\sum_{i=1}^{n} 2^{i+2} = \underbrace{2^3}_{i=1} + \underbrace{2^4}_{i=2} + \underbrace{2^5}_{i=3}$$

Rješenje

a) $$\sum_{\alpha=3}^{5} \alpha^2 = 3^2 + 4^2 + 5^2 = 50$$

$\alpha = 3$ $\alpha = 4$ $\alpha = 5$

b) $$\sum_{i=1}^{n} 2^{i+2} = 2^3 + 2^4 + 2^5 +$$

$i = 1$ $i = 2$ $i = 3$

Rješenje

a) $$\sum_{\alpha=3}^{5} \alpha^2 = \underset{\alpha=3}{3^2} + \underset{\alpha=4}{4^2} + \underset{\alpha=5}{5^2} = 50$$

b) $$\sum_{i=1}^{n} 2^{i+2} = \underset{i=1}{2^3} + \underset{i=2}{2^4} + \underset{i=3}{2^5} + \cdots +$$

Rješenje

a) $$\sum_{\alpha=3}^{5} \alpha^2 = \underset{\substack{\uparrow \\ \alpha=3}}{3^2} + \underset{\substack{\uparrow \\ \alpha=4}}{4^2} + \underset{\substack{\uparrow \\ \alpha=5}}{5^2} = 50$$

b) $$\sum_{i=1}^{n} 2^{i+2} = \underset{\substack{\uparrow \\ i=1}}{2^3} + \underset{\substack{\uparrow \\ i=2}}{2^4} + \underset{\substack{\uparrow \\ i=3}}{2^5} + \cdots + 2^{n+2}$$

Rješenje

a) $$\sum_{\alpha=3}^{5} \alpha^2 = \underset{\alpha=3}{3^2} + \underset{\alpha=4}{4^2} + \underset{\alpha=5}{5^2} = 50$$

b) $$\sum_{i=1}^{n} 2^{i+2} = \underset{i=1}{2^3} + \underset{i=2}{2^4} + \underset{i=3}{2^5} + \cdots + \underset{i=n}{2^{n+2}}$$

Rješenje

a) $$\sum_{\alpha=3}^{5} \alpha^2 = \underbrace{3^2}_{\alpha=3} + \underbrace{4^2}_{\alpha=4} + \underbrace{5^2}_{\alpha=5} = 50$$

b) $$\sum_{i=1}^{n} 2^{i+2} = \underbrace{2^3}_{i=1} + \underbrace{2^4}_{i=2} + \underbrace{2^5}_{i=3} + \cdots + \underbrace{2^{n+2}}_{i=n} = 8 + 16 + 32 + \cdots + 2^{n+2}$$

c) $\sum_{k=5}^{n+2} (2k-1) =$

c) $\displaystyle\sum_{k=5}^{n+2}(2k-1)=9$

c) $\displaystyle\sum_{k=5}^{n+2}(2k-1) = 9$

$k = 5$

c) $\displaystyle\sum_{k=5}^{n+2}(2k-1) = 9 +$

$k = 5$

c) $\displaystyle\sum_{k=5}^{n+2}(2k-1) = \underset{k=5}{9} + 11$

c) $\displaystyle\sum_{k=5}^{n+2}(2k-1) = \underset{k=5}{9} + \underset{k=6}{11}$

c) $$\sum_{k=5}^{n+2}(2k-1) = \underset{k=5}{9} + \underset{k=6}{11} +$$

c) $\sum_{k=5}^{n+2}(2k-1) = \underset{k=5}{9} + \underset{k=6}{11} + 13$

c) $$\sum_{k=5}^{n+2}(2k-1) = \underset{k=5}{9} + \underset{k=6}{11} + \underset{k=7}{13}$$

c) $$\sum_{k=5}^{n+2}(2k-1) = \underset{\substack{\uparrow \\ k=5}}{9} + \underset{\substack{\uparrow \\ k=6}}{11} + \underset{\substack{\uparrow \\ k=7}}{13} +$$

c) $$\sum_{k=5}^{n+2}(2k-1) = \underset{k=5}{9} + \underset{k=6}{11} + \underset{k=7}{13} + \cdots +$$

c) $$\sum_{k=5}^{n+2} (2k-1) = \underset{k=5}{9} + \underset{k=6}{11} + \underset{k=7}{13} + \cdots + \big(2(n+2)-1\big)$$

c) $$\sum_{k=5}^{n+2} (2k-1) = \underbrace{9}_{k=5} + \underbrace{11}_{k=6} + \underbrace{13}_{k=7} + \cdots + \underbrace{\big(2(n+2)-1\big)}_{k=n+2}$$

c) $\displaystyle\sum_{k=5}^{n+2}(2k-1) = 9 + 11 + 13 + \cdots + \big(2(n+2)-1\big) =$

$k=5 \quad k=6 \quad k=7 \qquad\qquad k=n+2$

$$= 9 + 11 + 13 + \cdots + (2n+3)$$

c) $$\sum_{k=5}^{n+2}(2k-1) = \underbrace{9}_{k=5} + \underbrace{11}_{k=6} + \underbrace{13}_{k=7} + \cdots + \underbrace{\big(2(n+2)-1\big)}_{k=n+2} =$$

$$= 9 + 11 + 13 + \cdots + (2n+3)$$

$$\boxed{\sum_{j=3}^{n}(2j+3)}$$

c) $$\sum_{k=5}^{n+2}(2k-1) = \underset{k=5}{9} + \underset{k=6}{11} + \underset{k=7}{13} + \cdots + \underset{k=n+2}{\big(2(n+2)-1\big)} =$$

$$= 9 + 11 + 13 + \cdots + (2n+3)$$

$$\boxed{\sum_{j=3}^{n}(2j+3)}$$

Napomena

$$\sum_{k=5}^{n+2} 2k - 1 =$$

c) $$\sum_{k=5}^{n+2}(2k-1) = \underset{k=5}{9} + \underset{k=6}{11} + \underset{k=7}{13} + \cdots + \big(2(n+\underset{k=n+2}{2})-1\big) =$$

$$= 9 + 11 + 13 + \cdots + (2n+3)$$

$$\boxed{\sum_{j=3}^{n}(2j+3)}$$

Napomena

$$\sum_{k=5}^{n+2} 2k - 1 = 10$$

c) $$\sum_{k=5}^{n+2}(2k-1) = \underset{k=5}{9} + \underset{k=6}{11} + \underset{k=7}{13} + \cdots + \big(2(n+\underset{k=n+2}{2})-1\big) =$$

$$= 9 + 11 + 13 + \cdots + (2n+3)$$

$$\boxed{\sum_{j=3}^{n}(2j+3)}$$

Napomena

$$\sum_{k=5}^{n+2} 2k - 1 = \underset{k=5}{10}$$

c) $\sum_{k=5}^{n+2}(2k-1) = \underset{k=5}{9} + \underset{k=6}{11} + \underset{k=7}{13} + \cdots + \big(2(n+\underset{k=n+2}{2})-1\big) =$

$$= 9 + 11 + 13 + \cdots + (2n+3)$$

$$\boxed{\sum_{j=3}^{n}(2j+3)}$$

Napomena

$$\sum_{k=5}^{n+2} 2k - 1 = \underset{k=5}{10} +$$

c) $$\sum_{k=5}^{n+2}(2k-1) = \underset{\substack{\uparrow \\ k=5}}{9} + \underset{\substack{\uparrow \\ k=6}}{11} + \underset{\substack{\uparrow \\ k=7}}{13} + \cdots + \big(2(n+\underset{\substack{\uparrow \\ k=n+2}}{2})-1\big) =$$

$$= 9 + 11 + 13 + \cdots + (2n+3) \rightarrow \boxed{\sum_{j=3}^{n}(2j+3)}$$

Napomena

$$\sum_{k=5}^{n+2} 2k - 1 = \underset{\substack{\uparrow \\ k=5}}{10} + 12$$

c) $$\sum_{k=5}^{n+2}(2k-1) = \underset{\substack{\uparrow\\ k=5}}{9} + \underset{\substack{\uparrow\\ k=6}}{11} + \underset{\substack{\uparrow\\ k=7}}{13} + \cdots + \big(2(n+\underset{\substack{\uparrow\\ k=n+2}}{2})-1\big) =$$

$$= 9 + 11 + 13 + \cdots + (2n+3)$$

$$\boxed{\sum_{j=3}^{n}(2j+3)}$$

Napomena

$$\sum_{k=5}^{n+2} 2k - 1 = \underset{\substack{\uparrow\\ k=5}}{10} + \underset{\substack{\uparrow\\ k=6}}{12}$$

c) $$\sum_{k=5}^{n+2}(2k-1) = \underset{k=5}{9} + \underset{k=6}{11} + \underset{k=7}{13} + \cdots + \big(2(n+\underset{k=n+2}{2}) - 1\big) =$$

$$= 9 + 11 + 13 + \cdots + (2n+3)$$

$$\boxed{\sum_{j=3}^{n}(2j+3)}$$

Napomena

$$\sum_{k=5}^{n+2} 2k - 1 = \underset{k=5}{10} + \underset{k=6}{12} +$$

c) $$\sum_{k=5}^{n+2}(2k-1) = \underset{k=5}{9} + \underset{k=6}{11} + \underset{k=7}{13} + \cdots + \big(2(n+\underset{k=n+2}{2})-1\big) =$$

$$= 9 + 11 + 13 + \cdots + (2n+3)$$

$$\boxed{\sum_{j=3}^{n}(2j+3)}$$

Napomena

$$\sum_{k=5}^{n+2} 2k - 1 = \underset{k=5}{10} + \underset{k=6}{12} + 14$$

c) $$\sum_{k=5}^{n+2}(2k-1) = \underset{k=5}{9} + \underset{k=6}{11} + \underset{k=7}{13} + \cdots + \underset{k=n+2}{\big(2(n+2)-1\big)} =$$

$$= 9 + 11 + 13 + \cdots + (2n+3)$$

$$\boxed{\sum_{j=3}^{n}(2j+3)}$$

Napomena

$$\sum_{k=5}^{n+2} 2k - 1 = \underset{k=5}{10} + \underset{k=6}{12} + \underset{k=7}{14}$$

c) $$\sum_{k=5}^{n+2}(2k-1) = \underset{k=5}{9} + \underset{k=6}{11} + \underset{k=7}{13} + \cdots + \big(2(n+\underset{k=n+2}{2})-1\big) =$$

$$= 9 + 11 + 13 + \cdots + (2n+3)$$

$$\boxed{\sum_{j=3}^{n}(2j+3)}$$

Napomena

$$\sum_{k=5}^{n+2} 2k - 1 = \underset{k=5}{10} + \underset{k=6}{12} + \underset{k=7}{14} +$$

c) $$\sum_{k=5}^{n+2}(2k-1) = \underset{k=5}{9} + \underset{k=6}{11} + \underset{k=7}{13} + \cdots + \underset{k=n+2}{\big(2(n+2)-1\big)} =$$

$$= 9 + 11 + 13 + \cdots + (2n+3)$$

$$\boxed{\sum_{j=3}^{n}(2j+3)}$$

Napomena

$$\sum_{k=5}^{n+2} 2k - 1 = \underset{k=5}{10} + \underset{k=6}{12} + \underset{k=7}{14} + \cdots +$$

c) $$\sum_{k=5}^{n+2}(2k-1) = 9 + 11 + 13 + \cdots + \big(2(n+2)-1\big) =$$

$k=5$ $k=6$ $k=7$ $k=n+2$

$$= 9 + 11 + 13 + \cdots + (2n+3)$$

$$\boxed{\sum_{j=3}^{n}(2j+3)}$$

Napomena

$$\sum_{k=5}^{n+2} 2k - 1 = 10 + 12 + 14 + \cdots + (2n+4)$$

$k=5$ $k=6$ $k=7$

c) $$\sum_{k=5}^{n+2}(2k-1) = \underset{\substack{\uparrow \\ k=5}}{9} + \underset{\substack{\uparrow \\ k=6}}{11} + \underset{\substack{\uparrow \\ k=7}}{13} + \cdots + \big(2(n+\underset{\substack{\uparrow \\ k=n+2}}{2})-1\big) =$$

$$= 9 + 11 + 13 + \cdots + (2n+3)$$

$$\boxed{\sum_{j=3}^{n}(2j+3)}$$

Napomena

$$\sum_{k=5}^{n+2} 2k - 1 = \underset{\substack{\uparrow \\ k=5}}{10} + \underset{\substack{\uparrow \\ k=6}}{12} + \underset{\substack{\uparrow \\ k=7}}{14} + \cdots + (2n+\underset{\substack{\uparrow \\ k=n+2}}{4})$$

c) $$\sum_{k=5}^{n+2}(2k-1) = 9 + 11 + 13 + \cdots + \big(2(n+2)-1\big) =$$

$k=5$ $k=6$ $k=7$ $k=n+2$

$$= 9 + 11 + 13 + \cdots + (2n+3)$$

$$\boxed{\sum_{j=3}^{n}(2j+3)}$$

Napomena

$$\sum_{k=5}^{n+2} 2k - 1 = 10 + 12 + 14 + \cdots + (2n+4) - 1$$

$k=5$ $k=6$ $k=7$ $k=n+2$

d) $\sum_{j=2}^{n-1} a_k =$

d) $\sum_{j=2}^{n-1} a_k = a_k$

d) $\displaystyle\sum_{j=2}^{n-1} a_k = a_k$

$j = 2$

d) $\displaystyle\sum_{j=2}^{n-1} a_k = \underset{j=2}{a_k} +$

d) $\sum_{j=2}^{n-1} a_k = a_k + a_k$

$j = 2$

d) $\displaystyle\sum_{j=2}^{n-1} a_k = \underset{j=2}{a_k} + \underset{j=3}{a_k}$

d) $\displaystyle\sum_{j=2}^{n-1} a_k = \underbrace{a_k}_{j=2} + \underbrace{a_k}_{j=3} +$

d) $$\sum_{j=2}^{n-1} a_k = \underset{j=2}{a_k} + \underset{j=3}{a_k} + a_k$$

d) $$\sum_{j=2}^{n-1} a_k = \underset{\uparrow\, j=2}{a_k} + \underset{\uparrow\, j=3}{a_k} + \underset{\uparrow\, j=4}{a_k}$$

d) $$\sum_{j=2}^{n-1} a_k = \underset{j=2}{\underset{\uparrow}{a_k}} + \underset{j=3}{\underset{\uparrow}{a_k}} + \underset{j=4}{\underset{\uparrow}{a_k}} +$$

d) $$\sum_{j=2}^{n-1} a_k = \underset{\overset{\uparrow}{j=2}}{a_k} + \underset{\overset{\uparrow}{j=3}}{a_k} + \underset{\overset{\uparrow}{j=4}}{a_k} + \cdots +$$

d) $$\sum_{j=2}^{n-1} a_k = \underset{\substack{\uparrow \\ j=2}}{a_k} + \underset{\substack{\uparrow \\ j=3}}{a_k} + \underset{\substack{\uparrow \\ j=4}}{a_k} + \cdots + a_k$$

d) $$\sum_{j=2}^{n-1} a_k = \underset{j=2}{a_k} + \underset{j=3}{a_k} + \underset{j=4}{a_k} + \cdots + \underset{j=n-1}{a_k}$$

d) $$\sum_{j=2}^{n-1} a_k = \underset{j=2}{a_k} + \underset{j=3}{a_k} + \underset{j=4}{a_k} + \cdots + \underset{j=n-1}{a_k} =$$

d) $$\sum_{j=2}^{n-1} a_k = \overbrace{\underset{j=2}{a_k} + \underset{j=3}{a_k} + \underset{j=4}{a_k} + \cdots + \underset{j=n-1}{a_k}}^{n-2} =$$

d) $$\sum_{j=2}^{n-1} a_k = \overbrace{\underset{j=2}{a_k} + \underset{j=3}{a_k} + \underset{j=4}{a_k} + \cdots + \underset{j=n-1}{a_k}}^{n-2} = (n-2)a_k$$

Binomni teorem

$$n! =$$

$$n! = 1 \cdot 2 \cdot 3 \cdots n$$

n faktorijela

$$n! = 1 \cdot 2 \cdot 3 \cdots n$$

n faktorijela

$$n! = 1 \cdot 2 \cdot 3 \cdots n, \quad n \in \mathbb{N}$$

n faktorijela

$$n! = 1 \cdot 2 \cdot 3 \cdots n, \quad n \in \mathbb{N}$$

$$5! =$$

n faktorijela

$$n! = 1 \cdot 2 \cdot 3 \cdots n, \quad n \in \mathbb{N}$$

$$5! = 1 \cdot 2 \cdot 3 \cdot 4 \cdot 5$$

n faktorijela

$$n! = 1 \cdot 2 \cdot 3 \cdots n, \quad n \in \mathbb{N}$$

$$5! = 1 \cdot 2 \cdot 3 \cdot 4 \cdot 5 = 120$$

n faktorijela

$$n! = 1 \cdot 2 \cdot 3 \cdots n, \quad n \in \mathbb{N}$$

$$5! = \underbrace{1 \cdot 2 \cdot 3 \cdot 4}_{4!} \cdot 5 = 120$$

n faktorijela

$$n! = 1 \cdot 2 \cdot 3 \cdots n, \quad n \in \mathbb{N}$$

$$5! = \underbrace{1 \cdot 2 \cdot 3 \cdot 4}_{4!} \cdot 5 = 120$$

$$n! = (n-1)! \cdot n$$

n faktorijela

$$n! = 1 \cdot 2 \cdot 3 \cdots n, \quad n \in \mathbb{N}$$

$$5! = \underbrace{\overbrace{1 \cdot 2 \cdot 3}^{3!} \cdot 4}_{4!} \cdot 5 = 120$$

$$n! = (n-1)! \cdot n$$

n faktorijela

$$n! = 1 \cdot 2 \cdot 3 \cdots n, \qquad n \in \mathbb{N}$$

$$5! = \underbrace{\overbrace{1 \cdot 2 \cdot 3}^{3!} \cdot 4}_{4!} \cdot 5 = 120$$

$$n! = (n-1)! \cdot n \qquad\qquad n! = (n-2)! \cdot (n-1) \cdot n$$

n faktorijela

$$n! = 1 \cdot 2 \cdot 3 \cdots n, \quad n \in \mathbb{N}$$

$$5! = \underbrace{\overbrace{1 \cdot 2 \cdot 3}^{3!} \cdot 4}_{4!} \cdot 5 = 120$$

$$n! = (n-1)! \cdot n \qquad\qquad n! = (n-2)! \cdot (n-1) \cdot n$$

- Po dogovoru je $0! = 1$.

Binomni koeficijent

$$\binom{n}{k} =$$

Binomni koeficijent

n povrh k

$$\binom{n}{k} =$$

Binomni koeficijent

n povrh *k*

$$\binom{n}{k} = \underline{\hspace{4cm}}$$

Binomni koeficijent

n povrh *k*

$$\binom{n}{k} = \frac{n!}{}$$

Binomni koeficijent

n povrh *k*

$$\binom{n}{k} = \frac{n!}{k!\qquad\qquad\qquad}$$

Binomni koeficijent

n povrh k

$$\binom{n}{k} = \frac{n!}{k! \cdot \qquad\qquad}$$

Binomni koeficijent

n povrh k

$$\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!}$$

Binomni koeficijent

n povrh k

$$\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!} \qquad \binom{n}{k} =$$

Binomni koeficijent

n povrh k

$$\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!}$$

$$\binom{n}{k} = \frac{}{}$$

Binomni koeficijent

n povrh k

$$\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!}$$

$$\binom{n}{k} = \frac{\qquad}{1 \cdot 2 \cdots k}$$

Binomni koeficijent

n povrh k

$$\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!} \qquad \binom{n}{k} = \frac{n(n-1)\cdots(n-k+1)}{1 \cdot 2 \cdots k}$$

Binomni koeficijent

n povrh k

$$\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!} \qquad \binom{n}{k} = \frac{n(n-1)\cdots(n-k+1)}{1 \cdot 2 \cdots k}$$

Primjer

$$\binom{6}{4} =$$

Binomni koeficijent

n povrh *k*

$$\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!} \qquad \binom{n}{k} = \frac{n(n-1)\cdots(n-k+1)}{1 \cdot 2 \cdots k}$$

Primjer

$$\binom{6}{4} = \underline{\qquad\qquad}$$

Binomni koeficijent

n povrh k

$$\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!} \qquad \binom{n}{k} = \frac{n(n-1)\cdots(n-k+1)}{1 \cdot 2 \cdots k}$$

Primjer

$$\binom{6}{4} = \frac{6!}{}$$

Binomni koeficijent

n povrh k

$$\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!} \qquad \binom{n}{k} = \frac{n(n-1)\cdots(n-k+1)}{1 \cdot 2 \cdots k}$$

Primjer

$$\binom{6}{4} = \frac{6!}{4!}$$

Binomni koeficijent

n povrh k

$$\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!} \qquad \binom{n}{k} = \frac{n(n-1)\cdots(n-k+1)}{1\cdot 2\cdots k}$$

Primjer

$$\binom{6}{4} = \frac{6!}{4! \cdot }$$

Binomni koeficijent

n povrh k

$$\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!} \qquad \binom{n}{k} = \frac{n(n-1)\cdots(n-k+1)}{1 \cdot 2 \cdots k}$$

Primjer

$$\binom{6}{4} = \frac{6!}{4! \cdot (6-4)!}$$

Binomni koeficijent

n povrh *k*

$$\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!} \qquad \binom{n}{k} = \frac{n(n-1)\cdots(n-k+1)}{1 \cdot 2 \cdots k}$$

Primjer

$$\binom{6}{4} = \frac{6!}{4! \cdot (6-4)!} = \frac{6!}{4! \cdot 2!}$$

Binomni koeficijent

n povrh *k*

$$\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!} \qquad \binom{n}{k} = \frac{n(n-1)\cdots(n-k+1)}{1\cdot 2\cdots k}$$

Primjer

$$\binom{6}{4} = \frac{6!}{4! \cdot (6-4)!} = \frac{6!}{4! \cdot 2!} = \underline{\qquad\qquad}$$

Binomni koeficijent

n povrh *k*

$$\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!} \qquad \binom{n}{k} = \frac{n(n-1)\cdots(n-k+1)}{1\cdot 2 \cdots k}$$

Primjer

$$\binom{6}{4} = \frac{6!}{4! \cdot (6-4)!} = \frac{6!}{4! \cdot 2!} = \frac{}{4! \cdot 2}$$

Binomni koeficijent

n povrh *k*

$$\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!} \qquad \binom{n}{k} = \frac{n(n-1)\cdots(n-k+1)}{1 \cdot 2 \cdots k}$$

Primjer

$$\binom{6}{4} = \frac{6!}{4! \cdot (6-4)!} = \frac{6!}{4! \cdot 2!} = \frac{4!}{4! \cdot 2}$$

Binomni koeficijent

n povrh k

$$\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!}$$

$$\binom{n}{k} = \frac{n(n-1)\cdots(n-k+1)}{1 \cdot 2 \cdots k}$$

Primjer

$$\binom{6}{4} = \frac{6!}{4! \cdot (6-4)!} = \frac{6!}{4! \cdot 2!} = \frac{4! \cdot 5}{4! \cdot 2}$$

Binomni koeficijent

n povrh k

$$\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!} \qquad \binom{n}{k} = \frac{n(n-1)\cdots(n-k+1)}{1 \cdot 2 \cdots k}$$

Primjer

$$\binom{6}{4} = \frac{6!}{4! \cdot (6-4)!} = \frac{6!}{4! \cdot 2!} = \frac{4! \cdot 5 \cdot 6}{4! \cdot 2}$$

Binomni koeficijent

n povrh k

$$\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!} \qquad \binom{n}{k} = \frac{n(n-1)\cdots(n-k+1)}{1 \cdot 2 \cdots k}$$

Primjer

$$\binom{6}{4} = \frac{6!}{4! \cdot (6-4)!} = \frac{6!}{4! \cdot 2!} = \frac{\cancel{4!} \cdot 5 \cdot 6}{\cancel{4!} \cdot 2}$$

Binomni koeficijent

n povrh k

$$\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!} \qquad \binom{n}{k} = \frac{n(n-1)\cdots(n-k+1)}{1\cdot 2 \cdots k}$$

Primjer

$$\binom{6}{4} = \frac{6!}{4! \cdot (6-4)!} = \frac{6!}{4! \cdot 2!} = \frac{\cancel{4!} \cdot 5 \cdot 6}{\cancel{4!} \cdot 2} = 15$$

Binomni koeficijent

n povrh k

$$\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!} \qquad \binom{n}{k} = \frac{n(n-1)\cdots(n-k+1)}{1 \cdot 2 \cdots k}$$

Primjer

$$\binom{6}{4} = \frac{6!}{4! \cdot (6-4)!} = \frac{6!}{4! \cdot 2!} = \frac{\cancel{4!} \cdot 5 \cdot 6}{\cancel{4!} \cdot 2} = 15$$

$$\binom{6}{4} =$$

Binomni koeficijent

n povrh k

$$\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!}$$

$$\binom{n}{k} = \frac{n(n-1)\cdots(n-k+1)}{1 \cdot 2 \cdots k}$$

Primjer

$$\binom{6}{4} = \frac{6!}{4! \cdot (6-4)!} = \frac{6!}{4! \cdot 2!} = \frac{\cancel{4!} \cdot 5 \cdot 6}{\cancel{4!} \cdot 2} = 15$$

$$\binom{6}{4} = \underline{\qquad\qquad}$$

Binomni koeficijent

n povrh *k*

$$\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!} \qquad \binom{n}{k} = \frac{n(n-1)\cdots(n-k+1)}{1 \cdot 2 \cdots k}$$

Primjer

$$\binom{6}{4} = \frac{6!}{4! \cdot (6-4)!} = \frac{6!}{4! \cdot 2!} = \frac{\cancel{4!} \cdot 5 \cdot 6}{\cancel{4!} \cdot 2} = 15$$

$$\binom{6}{4} = \frac{}{1 \cdot 2 \cdot 3 \cdot 4}$$

Binomni koeficijent

n povrh k

$$\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!} \qquad \binom{n}{k} = \frac{n(n-1)\cdots(n-k+1)}{1 \cdot 2 \cdots k}$$

Primjer

$$\binom{6}{4} = \frac{6!}{4! \cdot (6-4)!} = \frac{6!}{4! \cdot 2!} = \frac{\cancel{4!} \cdot 5 \cdot 6}{\cancel{4!} \cdot 2} = 15$$

$$\binom{6}{4} = \frac{6}{1 \cdot 2 \cdot 3 \cdot 4}$$

Binomni koeficijent

n povrh *k*

$$\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!} \qquad \binom{n}{k} = \frac{n(n-1)\cdots(n-k+1)}{1\cdot 2\cdots k}$$

Primjer

$$\binom{6}{4} = \frac{6!}{4! \cdot (6-4)!} = \frac{6!}{4! \cdot 2!} = \frac{\cancel{4!} \cdot 5 \cdot 6}{\cancel{4!} \cdot 2} = 15$$

$$\binom{6}{4} = \frac{6 \cdot 5}{1 \cdot 2 \cdot 3 \cdot 4}$$

Binomni koeficijent

n povrh k

$$\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!}$$

$$\binom{n}{k} = \frac{n(n-1)\cdots(n-k+1)}{1 \cdot 2 \cdots k}$$

Primjer

$$\binom{6}{4} = \frac{6!}{4! \cdot (6-4)!} = \frac{6!}{4! \cdot 2!} = \frac{\cancel{4!} \cdot 5 \cdot 6}{\cancel{4!} \cdot 2} = 15$$

$$\binom{6}{4} = \frac{6 \cdot 5 \cdot 4}{1 \cdot 2 \cdot 3 \cdot 4}$$

Binomni koeficijent

n povrh k

$$\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!}$$

$$\binom{n}{k} = \frac{n(n-1)\cdots(n-k+1)}{1 \cdot 2 \cdots k}$$

Primjer

$$\binom{6}{4} = \frac{6!}{4! \cdot (6-4)!} = \frac{6!}{4! \cdot 2!} = \frac{\cancel{4!} \cdot 5 \cdot 6}{\cancel{4!} \cdot 2} = 15$$

$$\binom{6}{4} = \frac{6 \cdot 5 \cdot 4 \cdot 3}{1 \cdot 2 \cdot 3 \cdot 4}$$

Binomni koeficijent

n povrh k

$$\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!} \qquad \binom{n}{k} = \frac{n(n-1)\cdots(n-k+1)}{1\cdot 2 \cdots k}$$

Primjer

$$\binom{6}{4} = \frac{6!}{4! \cdot (6-4)!} = \frac{6!}{4! \cdot 2!} = \frac{\cancel{4!} \cdot 5 \cdot 6}{\cancel{4!} \cdot 2} = 15$$

$$\binom{6}{4} = \frac{6 \cdot 5 \cdot 4 \cdot \cancel{3}}{1 \cdot 2 \cdot \cancel{3} \cdot 4}$$

Binomni koeficijent

n povrh k

$$\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!} \qquad \binom{n}{k} = \frac{n(n-1)\cdots(n-k+1)}{1 \cdot 2 \cdots k}$$

Primjer

$$\binom{6}{4} = \frac{6!}{4! \cdot (6-4)!} = \frac{6!}{4! \cdot 2!} = \frac{\cancel{4!} \cdot 5 \cdot 6}{\cancel{4!} \cdot 2} = 15$$

$$\binom{6}{4} = \frac{6 \cdot 5 \cdot \cancel{4} \cdot \cancel{3}}{1 \cdot 2 \cdot \cancel{3} \cdot \cancel{4}}$$

Binomni koeficijent

n povrh k

$$\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!} \qquad \binom{n}{k} = \frac{n(n-1)\cdots(n-k+1)}{1 \cdot 2 \cdots k}$$

Primjer

$$\binom{6}{4} = \frac{6!}{4! \cdot (6-4)!} = \frac{6!}{4! \cdot 2!} = \frac{\cancel{4!} \cdot 5 \cdot 6}{\cancel{4!} \cdot 2} = 15$$

$$\binom{6}{4} = \frac{6 \cdot 5 \cdot \cancel{4} \cdot \cancel{3}}{1 \cdot 2 \cdot \cancel{3} \cdot \cancel{4}} = 15$$

$$\boxed{\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!}}$$

$$\boxed{\binom{n}{k} = \frac{n \cdot (n-1) \cdots (n-k+1)}{1 \cdot 2 \cdots k}}$$

$$\binom{n}{0} =$$

$$\boxed{\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!}}$$

$$\boxed{\binom{n}{k} = \frac{n \cdot (n-1) \cdots (n-k+1)}{1 \cdot 2 \cdots k}}$$

$$\binom{n}{0} = \underline{\hspace{4cm}}$$

$$\boxed{\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!}}$$

$$\boxed{\binom{n}{k} = \frac{n \cdot (n-1) \cdots (n-k+1)}{1 \cdot 2 \cdots k}}$$

$$\binom{n}{0} = \frac{n!}{}$$

$$\boxed{\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!}}$$

$$\boxed{\binom{n}{k} = \frac{n \cdot (n-1) \cdots (n-k+1)}{1 \cdot 2 \cdots k}}$$

$$\binom{n}{0} = \frac{n!}{0! \qquad\qquad\qquad}$$

$$\boxed{\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!}}$$

$$\boxed{\binom{n}{k} = \frac{n \cdot (n-1) \cdots (n-k+1)}{1 \cdot 2 \cdots k}}$$

$$\binom{n}{0} = \frac{n!}{0! \cdot \qquad\qquad}$$

$$\boxed{\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!}}$$

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$$\binom{n}{0} = \frac{n!}{0! \cdot (n-0)!}$$

$$\boxed{\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!}}$$

$$\boxed{\binom{n}{k} = \frac{n \cdot (n-1) \cdots (n-k+1)}{1 \cdot 2 \cdots k}}$$

$$\binom{n}{0} = \frac{n!}{0! \cdot (n-0)!} = \frac{}{}$$

$$\boxed{\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!}}$$

$$\boxed{\binom{n}{k} = \frac{n \cdot (n-1) \cdots (n-k+1)}{1 \cdot 2 \cdots k}}$$

$$\binom{n}{0} = \frac{n!}{0! \cdot (n-0)!} = \frac{n!}{}$$

$$\boxed{\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!}}$$

$$\boxed{\binom{n}{k} = \frac{n \cdot (n-1) \cdots (n-k+1)}{1 \cdot 2 \cdots k}}$$

$$\binom{n}{0} = \frac{n!}{0! \cdot (n-0)!} = \frac{n!}{1}$$

$$\boxed{\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!}}$$

$$\boxed{\binom{n}{k} = \frac{n \cdot (n-1) \cdots (n-k+1)}{1 \cdot 2 \cdots k}}$$

$$\binom{n}{0} = \frac{n!}{0! \cdot (n-0)!} = \frac{n!}{1 \cdot}$$

$$\boxed{\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!}}$$

$$\boxed{\binom{n}{k} = \frac{n \cdot (n-1) \cdots (n-k+1)}{1 \cdot 2 \cdots k}}$$

$$\binom{n}{0} = \frac{n!}{0! \cdot (n-0)!} = \frac{n!}{1 \cdot n!}$$

$$\boxed{\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!}}$$

$$\boxed{\binom{n}{k} = \frac{n \cdot (n-1) \cdots (n-k+1)}{1 \cdot 2 \cdots k}}$$

$$\binom{n}{0} = \frac{n!}{0! \cdot (n-0)!} = \frac{n!}{1 \cdot n!} = 1$$

$$\boxed{\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!}}$$

$$\boxed{\binom{n}{k} = \frac{n \cdot (n-1) \cdots (n-k+1)}{1 \cdot 2 \cdots k}}$$

$$\binom{n}{0} = \frac{n!}{0! \cdot (n-0)!} = \frac{n!}{1 \cdot n!} = 1$$

$$\binom{n}{1} =$$

$$\boxed{\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!}}$$

$$\boxed{\binom{n}{k} = \frac{n \cdot (n-1) \cdots (n-k+1)}{1 \cdot 2 \cdots k}}$$

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$$\boxed{\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!}}$$

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$$\boxed{\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!}}$$

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$$\binom{n}{0} = \frac{n!}{0! \cdot (n-0)!} = \frac{n!}{1 \cdot n!} = 1$$

$$\binom{n}{1} = \frac{n!}{1! \cdot (n-1)!}$$

$$\boxed{\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!}}$$

$$\boxed{\binom{n}{k} = \frac{n \cdot (n-1) \cdots (n-k+1)}{1 \cdot 2 \cdots k}}$$

$$\binom{n}{0} = \frac{n!}{0! \cdot (n-0)!} = \frac{n!}{1 \cdot n!} = 1$$

$$\binom{n}{1} = \frac{n!}{1! \cdot (n-1)!} = \underline{\hspace{5cm}}$$

$$\boxed{\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!}}$$

$$\boxed{\binom{n}{k} = \frac{n \cdot (n-1) \cdots (n-k+1)}{1 \cdot 2 \cdots k}}$$

$$\binom{n}{0} = \frac{n!}{0! \cdot (n-0)!} = \frac{n!}{1 \cdot n!} = 1$$

$$\binom{n}{1} = \frac{n!}{1! \cdot (n-1)!} = \frac{}{(n-1)!}$$

$$\boxed{\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!}}$$

$$\boxed{\binom{n}{k} = \frac{n \cdot (n-1) \cdots (n-k+1)}{1 \cdot 2 \cdots k}}$$

$$\binom{n}{0} = \frac{n!}{0! \cdot (n-0)!} = \frac{n!}{1 \cdot n!} = 1$$

$$\binom{n}{1} = \frac{n!}{1! \cdot (n-1)!} = \frac{(n-1)!}{(n-1)!}$$

$$\boxed{\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!}} \qquad \boxed{\binom{n}{k} = \frac{n \cdot (n-1) \cdots (n-k+1)}{1 \cdot 2 \cdots k}}$$

$$\binom{n}{0} = \frac{n!}{0! \cdot (n-0)!} = \frac{n!}{1 \cdot n!} = 1$$

$$\binom{n}{1} = \frac{n!}{1! \cdot (n-1)!} = \frac{(n-1)! \cdot}{(n-1)!}$$

$$\boxed{\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!}}$$

$$\boxed{\binom{n}{k} = \frac{n \cdot (n-1) \cdots (n-k+1)}{1 \cdot 2 \cdots k}}$$

$$\binom{n}{0} = \frac{n!}{0! \cdot (n-0)!} = \frac{n!}{1 \cdot n!} = 1$$

$$\binom{n}{1} = \frac{n!}{1! \cdot (n-1)!} = \frac{(n-1)! \cdot n}{(n-1)!}$$

$$\boxed{\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!}}$$

$$\boxed{\binom{n}{k} = \frac{n \cdot (n-1) \cdots (n-k+1)}{1 \cdot 2 \cdots k}}$$

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$$\boxed{\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!}}$$

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$$\binom{n}{1} =$$

$$\boxed{\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!}}$$

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$$\binom{n}{1} = -$$

$$\boxed{\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!}} \qquad \boxed{\binom{n}{k} = \frac{n \cdot (n-1) \cdots (n-k+1)}{1 \cdot 2 \cdots k}}$$

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$$\binom{n}{1} = \frac{}{1}$$

$$\boxed{\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!}}$$

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$$\binom{n}{1} = \frac{n}{1}$$

$$\boxed{\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!}}$$

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$$\binom{n}{n} =$$

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$$\binom{n}{n} = \underline{\qquad\qquad\qquad}$$

$$\boxed{\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!}}$$

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$$\binom{n}{1} = \frac{n}{1} = n$$

$$\binom{n}{n} = \frac{n!}{\qquad\qquad}$$

$$\boxed{\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!}}$$

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$$\binom{n}{1} = \frac{n}{1} = n$$

$$\binom{n}{n} = \frac{n!}{n!}$$

$$\boxed{\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!}}$$

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$$\binom{n}{1} = \frac{n}{1} = n$$

$$\binom{n}{n} = \frac{n!}{n! \cdot }$$

$$\boxed{\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!}} \qquad \boxed{\binom{n}{k} = \frac{n \cdot (n-1) \cdots (n-k+1)}{1 \cdot 2 \cdots k}}$$

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$$\binom{n}{1} = \frac{n}{1} = n$$

$$\binom{n}{n} = \frac{n!}{n! \cdot (n-n)!}$$

$$\boxed{\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!}}$$

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$$\binom{n}{1} = \frac{n}{1} = n$$

$$\binom{n}{n} = \frac{n!}{n! \cdot (n-n)!} = \underline{\qquad\qquad}$$

$$\boxed{\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!}}$$

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$$\binom{n}{1} = \frac{n}{1} = n$$

$$\binom{n}{n} = \frac{n!}{n! \cdot (n-n)!} = \frac{n!}{}$$

$$\boxed{\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!}}$$

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$$\binom{n}{1} = \frac{n}{1} = n$$

$$\binom{n}{n} = \frac{n!}{n! \cdot (n-n)!} = \frac{n!}{n!}$$

$$\boxed{\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!}}$$

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$$\binom{n}{1} = \frac{n}{1} = n$$

$$\binom{n}{n} = \frac{n!}{n! \cdot (n-n)!} = \frac{n!}{n! \cdot}$$

$$\boxed{\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!}}$$

$$\boxed{\binom{n}{k} = \frac{n \cdot (n-1) \cdots (n-k+1)}{1 \cdot 2 \cdots k}}$$

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$$\binom{n}{1} = \frac{n}{1} = n$$

$$\binom{n}{n} = \frac{n!}{n! \cdot (n-n)!} = \frac{n!}{n! \cdot 0!}$$

$$\boxed{\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!}}$$

$$\boxed{\binom{n}{k} = \frac{n \cdot (n-1) \cdots (n-k+1)}{1 \cdot 2 \cdots k}}$$

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$$\binom{n}{n} =$$

$$\boxed{\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!}}$$

$$\boxed{\binom{n}{k} = \frac{n \cdot (n-1) \cdots (n-k+1)}{1 \cdot 2 \cdots k}}$$

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$$\binom{n}{n} = \frac{n!}{n! \cdot (n-n)!} = \frac{n!}{n! \cdot 0!} = 1$$

$$\binom{n}{n} = \frac{}{}$$

$$\boxed{\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!}} \qquad \boxed{\binom{n}{k} = \frac{n \cdot (n-1) \cdots (n-k+1)}{1 \cdot 2 \cdots k}}$$

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$$\binom{n}{1} = \frac{n}{1} = n$$

$$\binom{n}{n} = \frac{n!}{n! \cdot (n-n)!} = \frac{n!}{n! \cdot 0!} = 1$$

$$\binom{n}{n} = \frac{}{1 \cdot 2 \cdots (n-1) \cdot n}$$

$$\boxed{\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!}}$$

$$\boxed{\binom{n}{k} = \frac{n \cdot (n-1) \cdots (n-k+1)}{1 \cdot 2 \cdots k}}$$

$$\binom{n}{0} = \frac{n!}{0! \cdot (n-0)!} = \frac{n!}{1 \cdot n!} = 1$$

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$$\binom{n}{1} = \frac{n}{1} = n$$

$$\binom{n}{n} = \frac{n!}{n! \cdot (n-n)!} = \frac{n!}{n! \cdot 0!} = 1$$

$$\binom{n}{n} = \frac{n \cdot (n-1) \cdots 2 \cdot 1}{1 \cdot 2 \cdots (n-1) \cdot n}$$

$$\boxed{\binom{n}{k} = \frac{n!}{k! \cdot (n-k)!}}$$

$$\boxed{\binom{n}{k} = \frac{n \cdot (n-1) \cdots (n-k+1)}{1 \cdot 2 \cdots k}}$$

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$$\binom{n}{1} = \frac{n}{1} = n$$

$$\binom{n}{n} = \frac{n!}{n! \cdot (n-n)!} = \frac{n!}{n! \cdot 0!} = 1$$

$$\binom{n}{n} = \frac{n \cdot (n-1) \cdots 2 \cdot 1}{1 \cdot 2 \cdots (n-1) \cdot n} = 1$$

Svojstvo simetrije

$$\binom{n}{k} = \binom{n}{n-k}$$

Svojstvo simetrije

$$\binom{n}{k} = \binom{n}{n-k}$$

$$\binom{6}{4} =$$

Svojstvo simetrije

$$\binom{n}{k} = \binom{n}{n-k}$$

$$\binom{6}{4} = \binom{6}{6-4}$$

Svojstvo simetrije

$$\binom{n}{k} = \binom{n}{n-k}$$

$$\binom{6}{4} = \binom{6}{6-4} = \binom{6}{2}$$

Svojstvo simetrije

$$\binom{n}{k} = \binom{n}{n-k}$$

$$\binom{6}{4} = \binom{6}{6-4} = \binom{6}{2} = \underline{\qquad}$$

Svojstvo simetrije

$$\binom{n}{k} = \binom{n}{n-k}$$

$$\binom{6}{4} = \binom{6}{6-4} = \binom{6}{2} = \frac{}{1 \cdot 2}$$

Svojstvo simetrije

$$\binom{n}{k} = \binom{n}{n-k}$$

$$\binom{6}{4} = \binom{6}{6-4} = \binom{6}{2} = \frac{6 \cdot 5}{1 \cdot 2}$$

Svojstvo simetrije

$$\binom{n}{k} = \binom{n}{n-k}$$

$$\binom{6}{4} = \binom{6}{6-4} = \binom{6}{2} = \frac{6 \cdot 5}{1 \cdot 2} = 15$$

Svojstvo simetrije

$$\binom{n}{k} = \binom{n}{n-k}$$

$$\binom{6}{4} = \binom{6}{6-4} = \binom{6}{2} = \frac{6 \cdot 5}{1 \cdot 2} = 15$$

$$\binom{100}{97} =$$

Svojstvo simetrije

$$\binom{n}{k} = \binom{n}{n-k}$$

$$\binom{6}{4} = \binom{6}{6-4} = \binom{6}{2} = \frac{6 \cdot 5}{1 \cdot 2} = 15$$

$$\binom{100}{97} = \binom{100}{100-97}$$

Svojstvo simetrije

$$\binom{n}{k} = \binom{n}{n-k}$$

$$\binom{6}{4} = \binom{6}{6-4} = \binom{6}{2} = \frac{6 \cdot 5}{1 \cdot 2} = 15$$

$$\binom{100}{97} = \binom{100}{100-97} = \binom{100}{3}$$

Svojstvo simetrije

$$\binom{n}{k} = \binom{n}{n-k}$$

$$\binom{6}{4} = \binom{6}{6-4} = \binom{6}{2} = \frac{6 \cdot 5}{1 \cdot 2} = 15$$

$$\binom{100}{97} = \binom{100}{100-97} = \binom{100}{3} = \underline{\hspace{4cm}}$$

Svojstvo simetrije

$$\binom{n}{k} = \binom{n}{n-k}$$

$$\binom{6}{4} = \binom{6}{6-4} = \binom{6}{2} = \frac{6 \cdot 5}{1 \cdot 2} = 15$$

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Svojstvo simetrije

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Svojstvo simetrije

$$\binom{n}{k} = \binom{n}{n-k}$$

$$\binom{6}{4} = \binom{6}{6-4} = \binom{6}{2} = \frac{6 \cdot 5}{1 \cdot 2} = 15$$

$$\binom{100}{97} = \binom{100}{100-97} = \binom{100}{3} = \frac{100 \cdot 99 \cdot 98}{1 \cdot 2 \cdot 3} = 161\,700$$

Pascalov trokut

$$\binom{n}{k} + \binom{n}{k+1} = \binom{n+1}{k+1}$$

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$$\mathbf{1}$$

$$\mathbf{1} \qquad \mathbf{1}$$

Pascalov trokut

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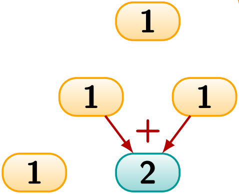

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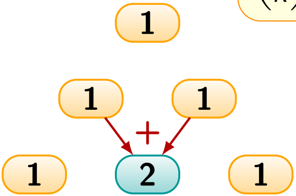

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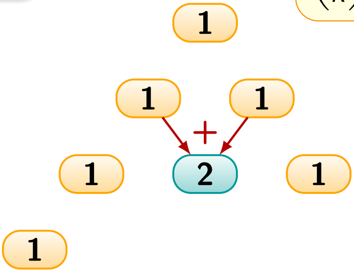

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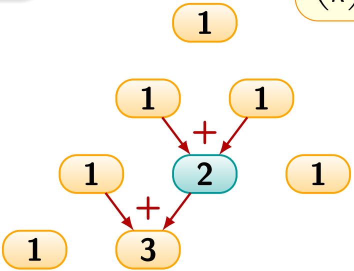

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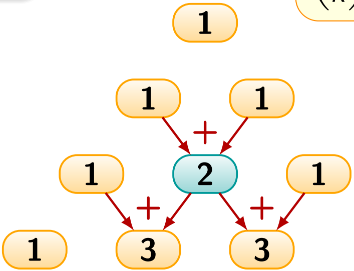

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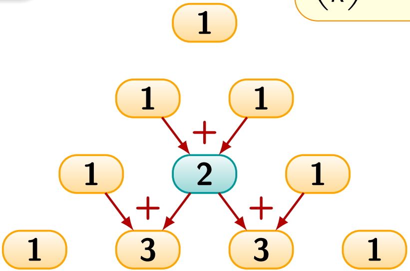

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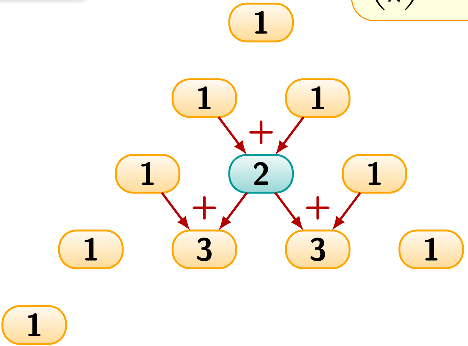

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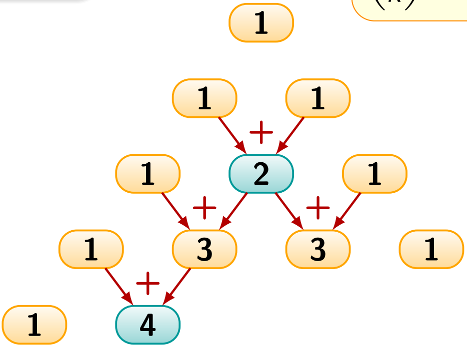

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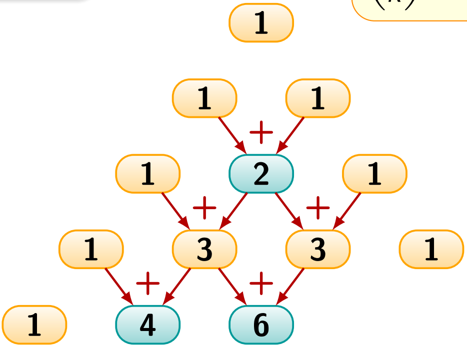

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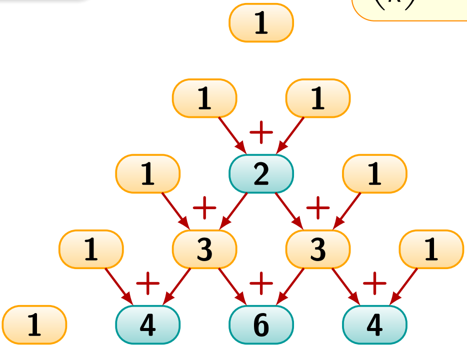

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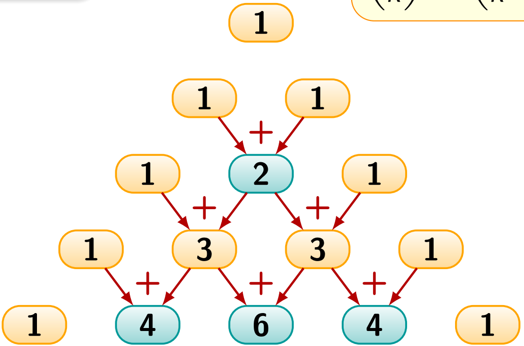

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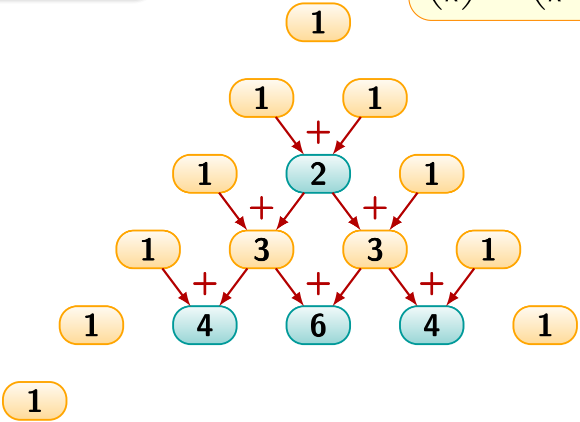

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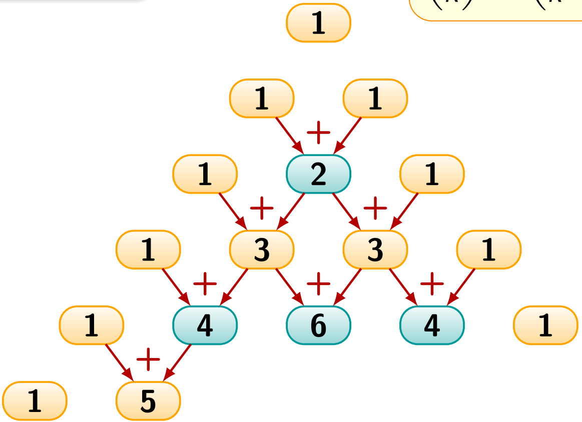

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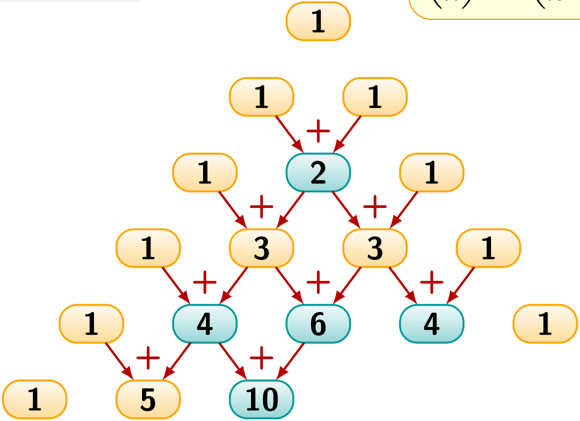

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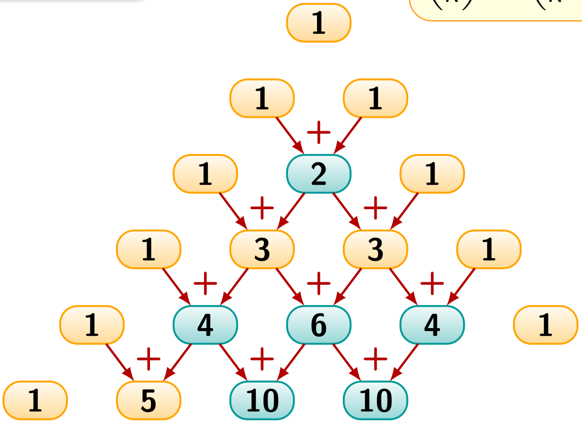

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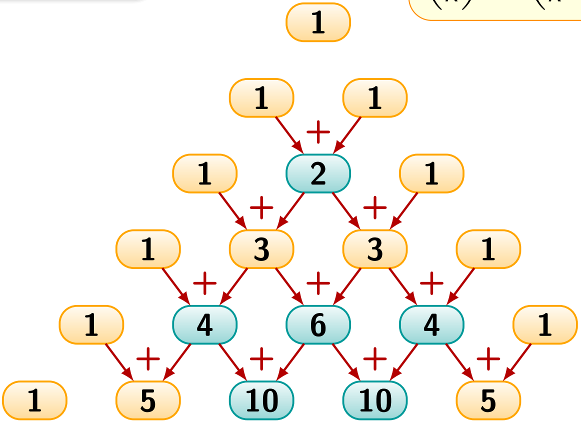

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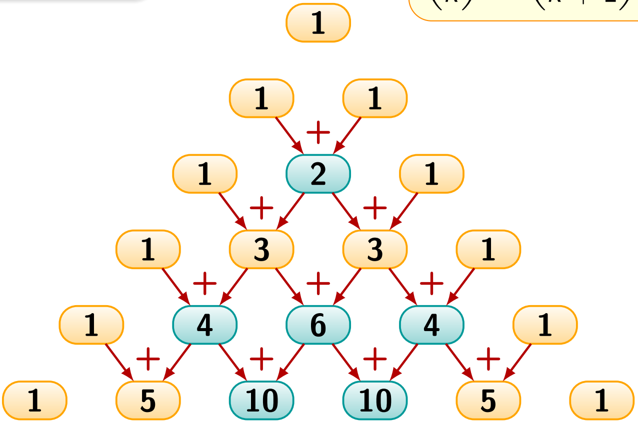

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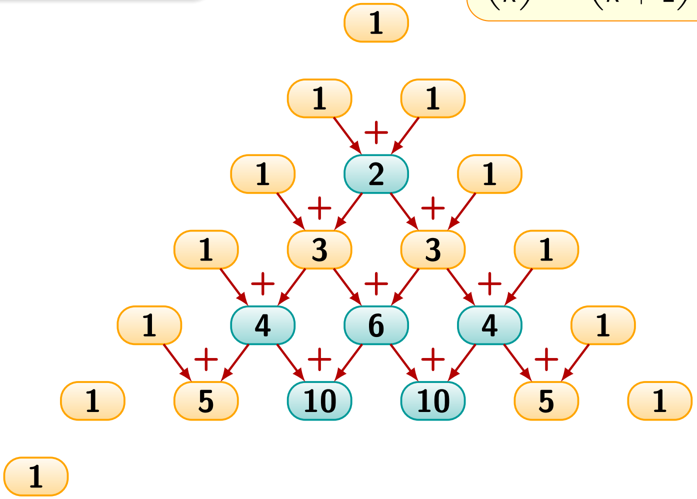

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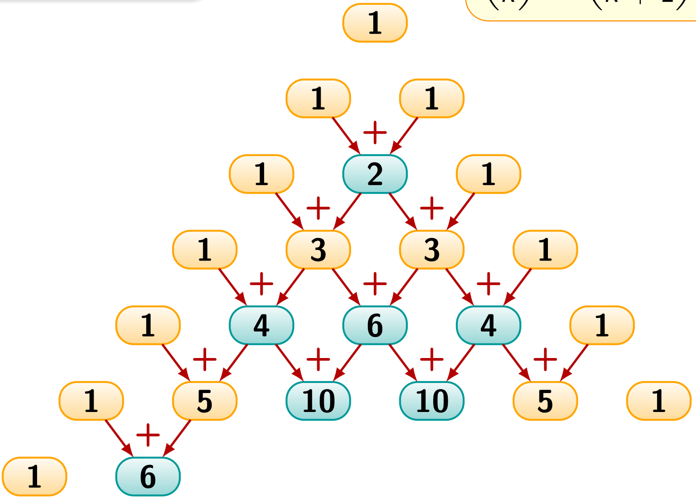

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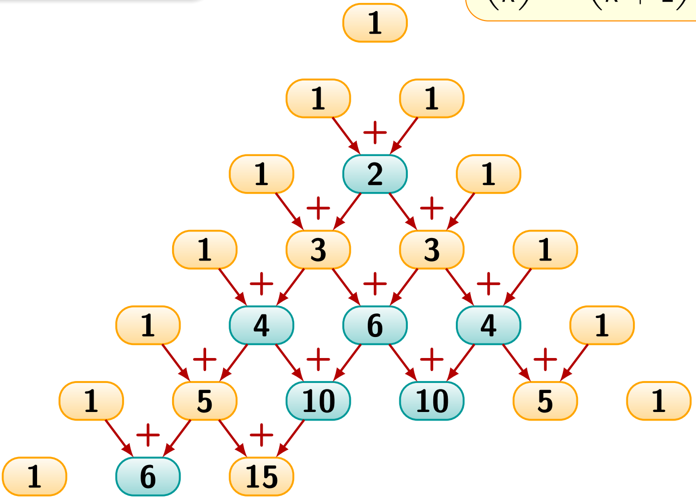

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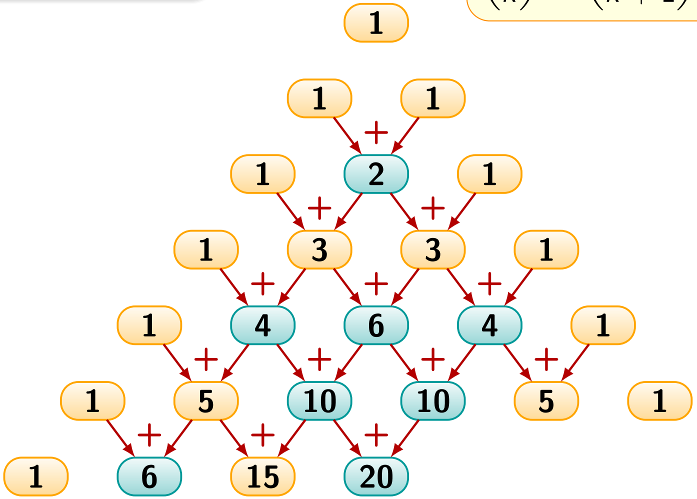

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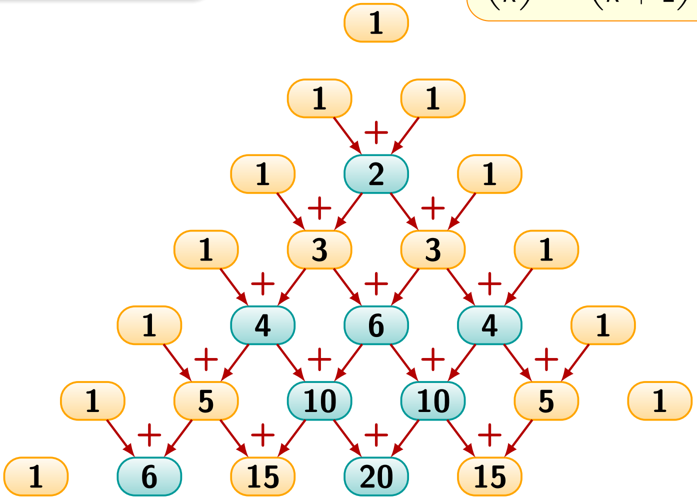

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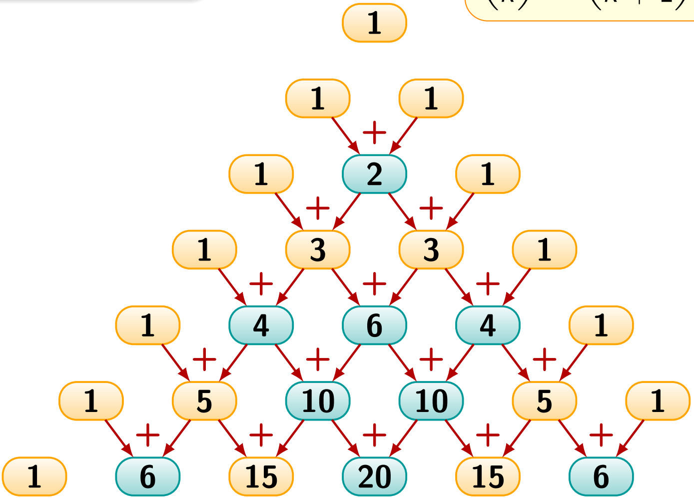

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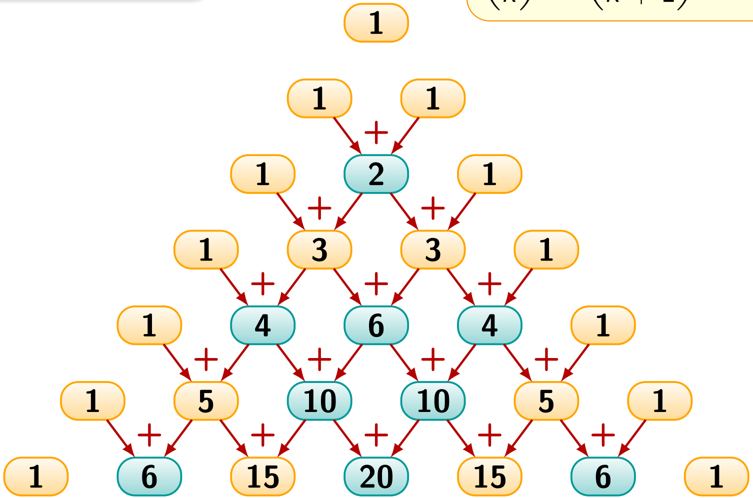

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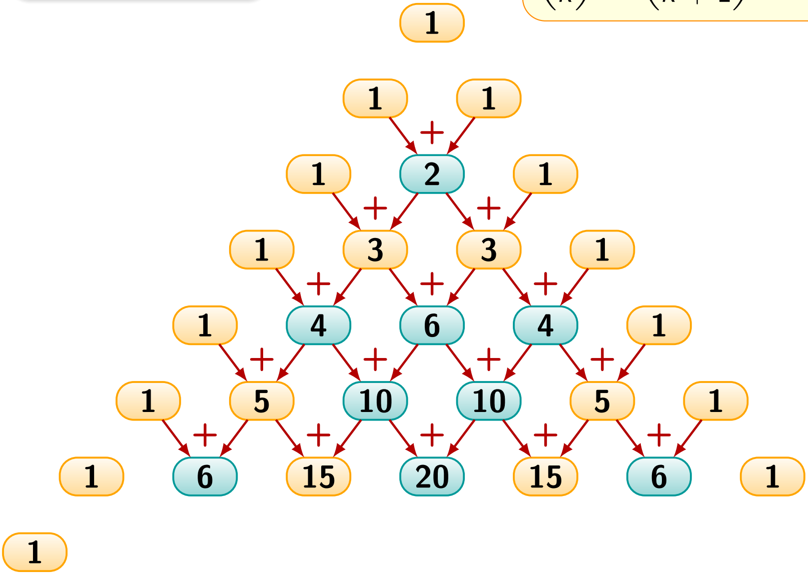

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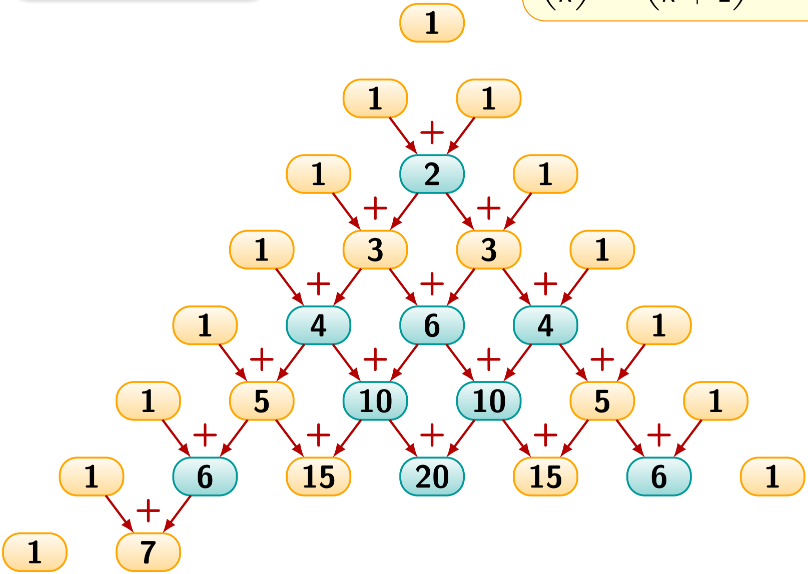

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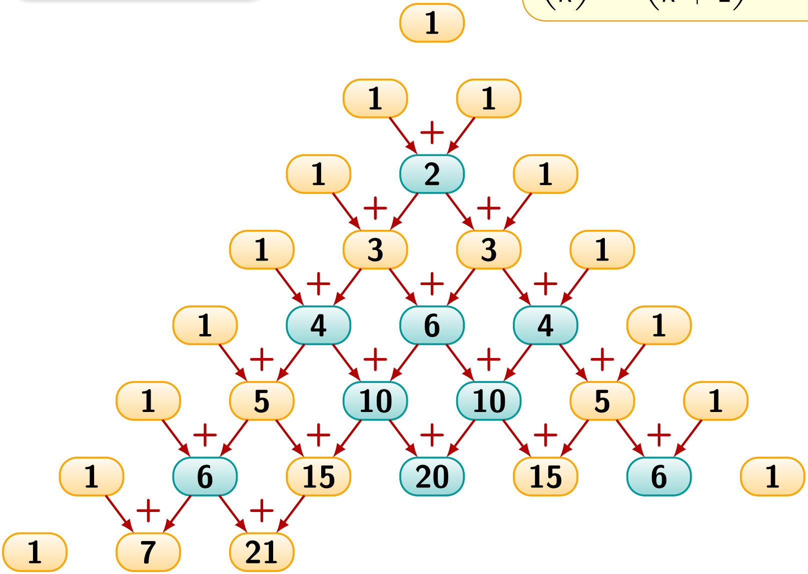

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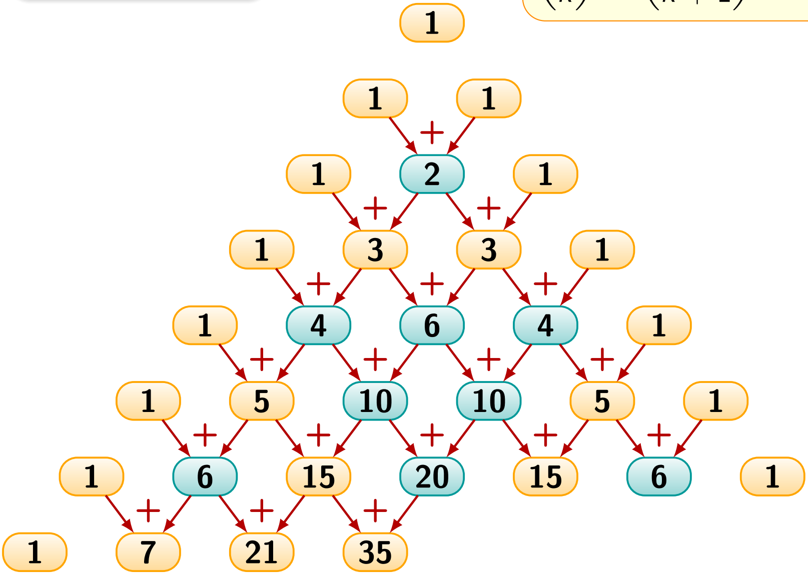

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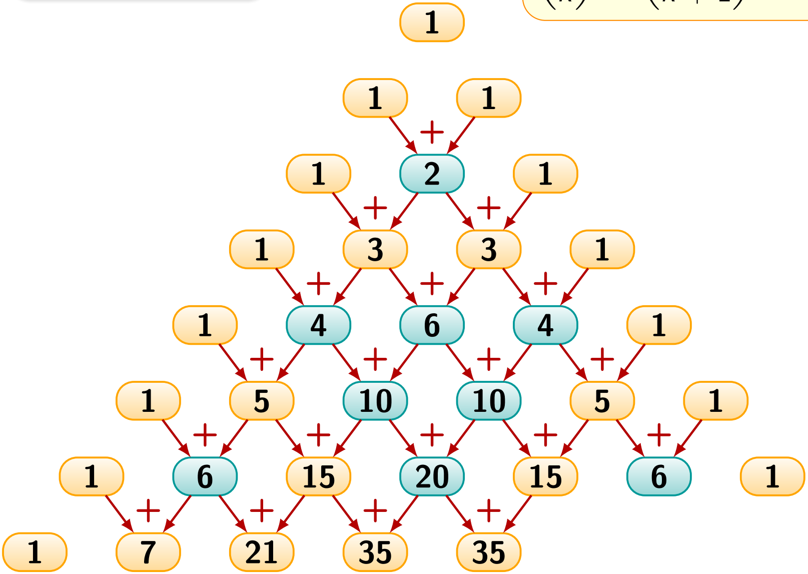

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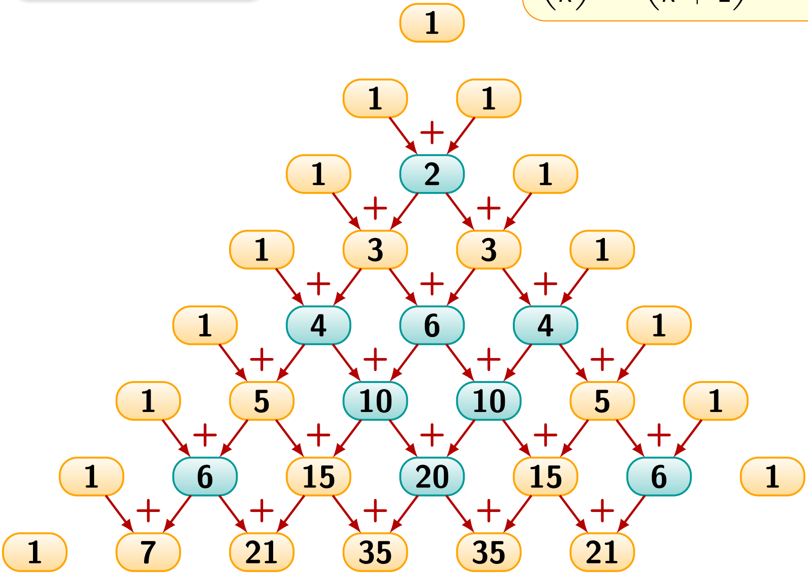

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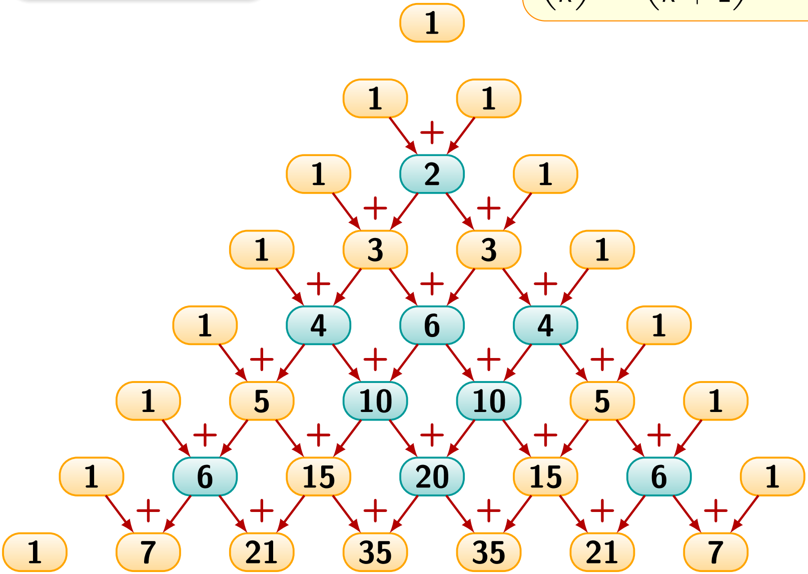

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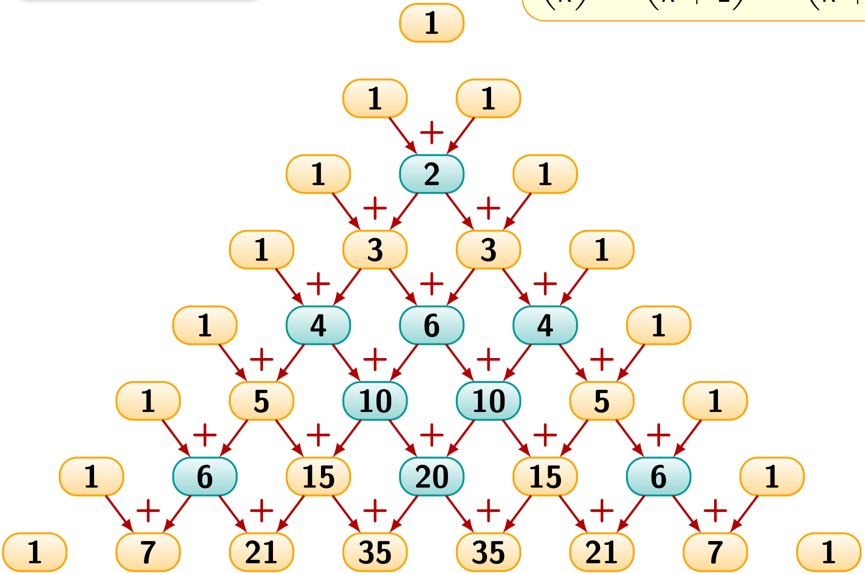

Binomni teorem

$$(a+b)^n = \sum_{k=0}^{n} \binom{n}{k} a^{n-k} b^k, \qquad n \in \mathbb{N}$$

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Binomni teorem

$$(a+b)^n = \sum_{k=0}^{n} \binom{n}{k} a^{n-k} b^k, \qquad n \in \mathbb{N}$$

$$(a+b)^n = \binom{n}{0} a^n b^0$$

Binomni teorem

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$$(a+b)^n = \underbrace{\binom{n}{0} a^n b^0}_{k=0}$$

Binomni teorem

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$$(a+b)^n = \underbrace{\binom{n}{0} a^n b^0}_{k=0} +$$

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$$(a+b)^n = \underbrace{\binom{n}{0} a^n b^0}_{k=0} + \binom{n}{1} a^{n-1} b^1$$

Binomni teorem

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$$(a+b)^2 =$$

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$$(a+b)^2 = \sum_{k=0}^{2}$$

Binomni teorem

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$$(a+b)^n = \underbrace{\binom{n}{0} a^n b^0}_{k=0} + \underbrace{\binom{n}{1} a^{n-1} b^1}_{k=1} + \underbrace{\binom{n}{2} a^{n-2} b^2}_{k=2} + \cdots + \underbrace{\binom{n}{n} a^0 b^n}_{k=n}$$

$$(a+b)^2 = \sum_{k=0}^{2} \binom{2}{k}$$

Binomni teorem

$$(a+b)^n = \sum_{k=0}^{n} \binom{n}{k} a^{n-k} b^k, \qquad n \in \mathbb{N}$$

$$(a+b)^n = \underbrace{\binom{n}{0} a^n b^0}_{k=0} + \underbrace{\binom{n}{1} a^{n-1} b^1}_{k=1} + \underbrace{\binom{n}{2} a^{n-2} b^2}_{k=2} + \cdots + \underbrace{\binom{n}{n} a^0 b^n}_{k=n}$$

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$$(a+b)^2 = \sum_{k=0}^{2} \binom{2}{k} a^{2-k} b^k = \binom{2}{0} a^2 b^0$$

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$$(a+b)^n = \sum_{k=0}^{n} \binom{n}{k} a^{n-k} b^k, \qquad n \in \mathbb{N}$$

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$$(a+b)^2 = \sum_{k=0}^{2} \binom{2}{k} a^{2-k} b^k = \underbrace{\binom{2}{0} a^2 b^0}_{k=0}$$

Binomni teorem

$$(a+b)^n = \sum_{k=0}^{n} \binom{n}{k} a^{n-k} b^k, \qquad n \in \mathbb{N}$$

$$(a+b)^n = \underbrace{\binom{n}{0} a^n b^0}_{k=0} + \underbrace{\binom{n}{1} a^{n-1} b^1}_{k=1} + \underbrace{\binom{n}{2} a^{n-2} b^2}_{k=2} + \cdots + \underbrace{\binom{n}{n} a^0 b^n}_{k=n}$$

$$(a+b)^2 = \sum_{k=0}^{2} \binom{2}{k} a^{2-k} b^k = \underbrace{\binom{2}{0} a^2 b^0}_{k=0} +$$

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$$(a+b)^2 = \sum_{k=0}^{2} \binom{2}{k} a^{2-k} b^k = \underbrace{\binom{2}{0} a^2 b^0}_{k=0} + \binom{2}{1} a^1 b^1$$

Binomni teorem

$$(a+b)^n = \sum_{k=0}^{n} \binom{n}{k} a^{n-k} b^k, \qquad n \in \mathbb{N}$$

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Binomni teorem

$$(a+b)^n = \sum_{k=0}^{n} \binom{n}{k} a^{n-k} b^k, \qquad n \in \mathbb{N}$$

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Binomni teorem

$$(a+b)^n = \sum_{k=0}^{n} \binom{n}{k} a^{n-k} b^k, \qquad n \in \mathbb{N}$$

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Binomni teorem

$$(a+b)^n = \sum_{k=0}^{n} \binom{n}{k} a^{n-k} b^k, \qquad n \in \mathbb{N}$$

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$$(a+b)^2 = \sum_{k=0}^{2} \binom{2}{k} a^{2-k} b^k = \underbrace{\binom{2}{0} a^2 b^0}_{k=0} + \underbrace{\binom{2}{1} a^1 b^1}_{k=1} + \underbrace{\binom{2}{2} a^0 b^2}_{k=2} =$$

$$= a^2$$

Binomni teorem

$$(a+b)^n = \sum_{k=0}^{n} \binom{n}{k} a^{n-k} b^k, \qquad n \in \mathbb{N}$$

$$(a+b)^n = \underbrace{\binom{n}{0} a^n b^0}_{k=0} + \underbrace{\binom{n}{1} a^{n-1} b^1}_{k=1} + \underbrace{\binom{n}{2} a^{n-2} b^2}_{k=2} + \cdots + \underbrace{\binom{n}{n} a^0 b^n}_{k=n}$$

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$$= a^2 + 2ab$$

Binomni teorem

$$(a+b)^n = \sum_{k=0}^{n} \binom{n}{k} a^{n-k} b^k, \qquad n \in \mathbb{N}$$

$$(a+b)^n = \underbrace{\binom{n}{0} a^n b^0}_{k=0} + \underbrace{\binom{n}{1} a^{n-1} b^1}_{k=1} + \underbrace{\binom{n}{2} a^{n-2} b^2}_{k=2} + \cdots + \underbrace{\binom{n}{n} a^0 b^n}_{k=n}$$

$$(a+b)^2 = \sum_{k=0}^{2} \binom{2}{k} a^{2-k} b^k = \underbrace{\binom{2}{0} a^2 b^0}_{k=0} + \underbrace{\binom{2}{1} a^1 b^1}_{k=1} + \underbrace{\binom{2}{2} a^0 b^2}_{k=2} =$$

$$= a^2 + 2ab + b^2$$

treći zadatak

Zadatak 3

Pomoću binomnog teorema raspišite i sredite binom $\left(\sqrt[3]{x}+x^2\right)^4$.

Zadatak 3

Pomoću binomnog teorema raspišite i sredite binom $\left(\sqrt[3]{x}+x^2\right)^4$.

Rješenje

$$\left(\sqrt[3]{x}+x^2\right)^4 =$$

Zadatak 3

Pomoću binomnog teorema raspišite i sredite binom $\left(\sqrt[3]{x}+x^2\right)^4$.

Rješenje

$$\Big(\overset{a}{\boxed{\sqrt[3]{x}}}+x^2\Big)^4=$$

Zadatak 3

Pomoću binomnog teorema raspišite i sredite binom $\left(\sqrt[3]{x}+x^2\right)^4$.

Rješenje

$$\Big(\overset{a}{\sqrt[3]{x}}+\overset{b}{x^2}\Big)^4 =$$

Zadatak 3

Pomoću binomnog teorema raspišite i sredite binom $\left(\sqrt[3]{x}+x^2\right)^4$.

Rješenje

$$\Big(\overset{a}{\sqrt[3]{x}}+\overset{b}{x^2}\Big)^4=\binom{4}{0}$$

Zadatak 3

Pomoću binomnog teorema raspišite i sredite binom $\left(\sqrt[3]{x}+x^2\right)^4$.

Rješenje

$$(\overset{a}{\sqrt[3]{x}}+\overset{b}{x^2})^4=\binom{4}{0}\sqrt[3]{x}^{\,4}$$

Zadatak 3

Pomoću binomnog teorema raspišite i sredite binom $\left(\sqrt[3]{x}+x^2\right)^4$.

Rješenje

$$\Big(\overset{a}{\boxed{\sqrt[3]{x}}}+\overset{b}{\boxed{x^2}}\Big)^4=\binom{4}{0}\sqrt[3]{x}^{\,4}\left(x^2\right)^0$$

Zadatak 3

Pomoću binomnog teorema raspišite i sredite binom $\left(\sqrt[3]{x}+x^2\right)^4$.

Rješenje

$$\Big(\overset{a}{\sqrt[3]{x}}+\overset{b}{x^2}\Big)^4=\binom{4}{0}\sqrt[3]{x}^{\,4}\left(x^2\right)^0+$$

Zadatak 3

Pomoću binomnog teorema raspišite i sredite binom $\left(\sqrt[3]{x} + x^2\right)^4$.

Rješenje

$$\Big(\overset{a}{\boxed{\sqrt[3]{x}}} + \overset{b}{\boxed{x^2}}\Big)^4 = \binom{4}{0} \sqrt[3]{x}^{\,4} \left(x^2\right)^0 + \binom{4}{1}$$

Zadatak 3

Pomoću binomnog teorema raspišite i sredite binom $\left(\sqrt[3]{x}+x^2\right)^4$.

Rješenje

$$(\overset{a}{\boxed{\sqrt[3]{x}}}+\overset{b}{\boxed{x^2}})^4=\binom{4}{0}\sqrt[3]{x}^{\,4}\left(x^2\right)^0+\binom{4}{1}\sqrt[3]{x}^{\,3}$$

Zadatak 3

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Rješenje

$$(\overset{a}{\boxed{\sqrt[3]{x}}}+\overset{b}{\boxed{x^2}})^4 = \binom{4}{0}\sqrt[3]{x}^{\,4}\left(x^2\right)^0+\binom{4}{1}\sqrt[3]{x}^{\,3}\left(x^2\right)^1$$

Zadatak 3

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$$(\overset{a}{\boxed{\sqrt[3]{x}}}+\overset{b}{\boxed{x^2}})^4=\binom{4}{0}\sqrt[3]{x}^{\,4}\left(x^2\right)^0+\binom{4}{1}\sqrt[3]{x}^{\,3}\left(x^2\right)^1+$$

$$+$$

Zadatak 3

Pomoću binomnog teorema raspišite i sredite binom $\left(\sqrt[3]{x}+x^2\right)^4$.

Rješenje

$$(\overset{a}{\sqrt[3]{x}}+\overset{b}{x^2})^4=\binom{4}{0}\sqrt[3]{x}^4\left(x^2\right)^0+\binom{4}{1}\sqrt[3]{x}^3\left(x^2\right)^1+$$

$$+\binom{4}{2}$$

Zadatak 3

Pomoću binomnog teorema raspišite i sredite binom $\left(\sqrt[3]{x}+x^2\right)^4$.

Rješenje

$$(\underbrace{\sqrt[3]{x}}_{a}+\underbrace{x^2}_{b})^4=\binom{4}{0}\sqrt[3]{x}^{\,4}\left(x^2\right)^0+\binom{4}{1}\sqrt[3]{x}^{\,3}\left(x^2\right)^1+$$

$$+\binom{4}{2}\sqrt[3]{x}^{\,2}$$

Zadatak 3

Pomoću binomnog teorema raspišite i sredite binom $\left(\sqrt[3]{x}+x^2\right)^4$.

Rješenje

$$\left(\overset{a}{\boxed{\sqrt[3]{x}}}+\overset{b}{\boxed{x^2}}\right)^4=\binom{4}{0}\sqrt[3]{x}^{\,4}\left(x^2\right)^0+\binom{4}{1}\sqrt[3]{x}^{\,3}\left(x^2\right)^1+$$

$$+\binom{4}{2}\sqrt[3]{x}^{\,2}\left(x^2\right)^2$$

Zadatak 3

Pomoću binomnog teorema raspišite i sredite binom $\left(\sqrt[3]{x}+x^2\right)^4$.

Rješenje

$$(\overset{a}{\sqrt[3]{x}}+\overset{b}{x^2})^4=\binom{4}{0}\sqrt[3]{x}^{\,4}\left(x^2\right)^0+\binom{4}{1}\sqrt[3]{x}^{\,3}\left(x^2\right)^1+$$

$$+\binom{4}{2}\sqrt[3]{x}^{\,2}\left(x^2\right)^2+$$

Zadatak 3

Pomoću binomnog teorema raspišite i sredite binom $\left(\sqrt[3]{x}+x^2\right)^4$.

Rješenje

$$\Big(\overset{a}{\boxed{\sqrt[3]{x}}}+\overset{b}{\boxed{x^2}}\Big)^4=\binom{4}{0}\sqrt[3]{x}^{\,4}\left(x^2\right)^0+\binom{4}{1}\sqrt[3]{x}^{\,3}\left(x^2\right)^1+$$

$$+\binom{4}{2}\sqrt[3]{x}^{\,2}\left(x^2\right)^2+\binom{4}{3}$$

Zadatak 3

Pomoću binomnog teorema raspišite i sredite binom $\left(\sqrt[3]{x}+x^2\right)^4$.

Rješenje

$$\left(\overset{a}{\boxed{\sqrt[3]{x}}}+\overset{b}{\boxed{x^2}}\right)^4=\binom{4}{0}\sqrt[3]{x}^{\,4}\left(x^2\right)^0+\binom{4}{1}\sqrt[3]{x}^{\,3}\left(x^2\right)^1+$$

$$+\binom{4}{2}\sqrt[3]{x}^{\,2}\left(x^2\right)^2+\binom{4}{3}\sqrt[3]{x}^{\,1}$$

Zadatak 3

Pomoću binomnog teorema raspišite i sredite binom $\left(\sqrt[3]{x}+x^2\right)^4$.

Rješenje

$$\left(\overset{a}{\boxed{\sqrt[3]{x}}}+\overset{b}{\boxed{x^2}}\right)^4=\binom{4}{0}\sqrt[3]{x}^{\,4}\left(x^2\right)^0+\binom{4}{1}\sqrt[3]{x}^{\,3}\left(x^2\right)^1+$$

$$+\binom{4}{2}\sqrt[3]{x}^{\,2}\left(x^2\right)^2+\binom{4}{3}\sqrt[3]{x}^{\,1}\left(x^2\right)^3$$

Zadatak 3

Pomoću binomnog teorema raspišite i sredite binom $\left(\sqrt[3]{x}+x^2\right)^4$.

Rješenje

$$\left(\overset{a}{\boxed{\sqrt[3]{x}}}+\overset{b}{\boxed{x^2}}\right)^4=\binom{4}{0}\sqrt[3]{x}^{\,4}\left(x^2\right)^0+\binom{4}{1}\sqrt[3]{x}^{\,3}\left(x^2\right)^1+$$

$$+\binom{4}{2}\sqrt[3]{x}^{\,2}\left(x^2\right)^2+\binom{4}{3}\sqrt[3]{x}^{\,1}\left(x^2\right)^3+$$

Zadatak 3

Pomoću binomnog teorema raspišite i sredite binom $\left(\sqrt[3]{x}+x^2\right)^4$.

Rješenje

$$\left(\overset{a}{\boxed{\sqrt[3]{x}}}+\overset{b}{\boxed{x^2}}\right)^4=\binom{4}{0}\sqrt[3]{x}^{\,4}\left(x^2\right)^0+\binom{4}{1}\sqrt[3]{x}^{\,3}\left(x^2\right)^1+$$

$$+\binom{4}{2}\sqrt[3]{x}^{\,2}\left(x^2\right)^2+\binom{4}{3}\sqrt[3]{x}^{\,1}\left(x^2\right)^3+\binom{4}{4}$$

Zadatak 3

Pomoću binomnog teorema raspišite i sredite binom $\left(\sqrt[3]{x} + x^2\right)^4$.

Rješenje

$$\left(\overset{a}{\boxed{\sqrt[3]{x}}} + \overset{b}{\boxed{x^2}}\right)^4 = \binom{4}{0}\sqrt[3]{x}^{\,4}\left(x^2\right)^0 + \binom{4}{1}\sqrt[3]{x}^{\,3}\left(x^2\right)^1 +$$

$$+ \binom{4}{2}\sqrt[3]{x}^{\,2}\left(x^2\right)^2 + \binom{4}{3}\sqrt[3]{x}^{\,1}\left(x^2\right)^3 + \binom{4}{4}\sqrt[3]{x}^{\,0}$$

Zadatak 3

Pomoću binomnog teorema raspišite i sredite binom $\left(\sqrt[3]{x} + x^2\right)^4$.

Rješenje

$$(\overset{a}{\boxed{\sqrt[3]{x}}} + \overset{b}{\boxed{x^2}})^4 = \binom{4}{0}\sqrt[3]{x}^{\,4}\left(x^2\right)^0 + \binom{4}{1}\sqrt[3]{x}^{\,3}\left(x^2\right)^1 +$$

$$+ \binom{4}{2}\sqrt[3]{x}^{\,2}\left(x^2\right)^2 + \binom{4}{3}\sqrt[3]{x}^{\,1}\left(x^2\right)^3 + \binom{4}{4}\sqrt[3]{x}^{\,0}\left(x^2\right)^4$$

Zadatak 3

Pomoću binomnog teorema raspišite i sredite binom $\left(\sqrt[3]{x}+x^2\right)^4$.

Rješenje

$$\left(\overset{a}{\boxed{\sqrt[3]{x}}}+\overset{b}{\boxed{x^2}}\right)^4=\binom{4}{0}\sqrt[3]{x}^{\,4}\left(x^2\right)^0+\binom{4}{1}\sqrt[3]{x}^{\,3}\left(x^2\right)^1+$$

$$+\binom{4}{2}\sqrt[3]{x}^{\,2}\left(x^2\right)^2+\binom{4}{3}\sqrt[3]{x}^{\,1}\left(x^2\right)^3+\binom{4}{4}\sqrt[3]{x}^{\,0}\left(x^2\right)^4=$$

$$=$$

Zadatak 3

Pomoću binomnog teorema raspišite i sredite binom $\left(\sqrt[3]{x}+x^2\right)^4$.

Rješenje

$$(\underbrace{\sqrt[3]{x}}^{a}+\underbrace{x^2}^{b})^4=\binom{4}{0}\sqrt[3]{x}^{\,4}\left(x^2\right)^0+\binom{4}{1}\sqrt[3]{x}^{\,3}\left(x^2\right)^1+$$

$$+\binom{4}{2}\sqrt[3]{x}^{\,2}\left(x^2\right)^2+\binom{4}{3}\sqrt[3]{x}^{\,1}\left(x^2\right)^3+\binom{4}{4}\sqrt[3]{x}^{\,0}\left(x^2\right)^4=$$

$$=1$$

Zadatak 3

Pomoću binomnog teorema raspišite i sredite binom $\left(\sqrt[3]{x}+x^2\right)^4$.

Rješenje

$$(\overset{a}{\boxed{\sqrt[3]{x}}}+\overset{b}{\boxed{x^2}})^4=\binom{4}{0}\sqrt[3]{x}^{\,4}\left(x^2\right)^0+\binom{4}{1}\sqrt[3]{x}^{\,3}\left(x^2\right)^1+$$

$$+\binom{4}{2}\sqrt[3]{x}^{\,2}\left(x^2\right)^2+\binom{4}{3}\sqrt[3]{x}^{\,1}\left(x^2\right)^3+\binom{4}{4}\sqrt[3]{x}^{\,0}\left(x^2\right)^4=$$

$$=1\cdot x^{\frac{4}{3}}$$

$$\boxed{\sqrt[n]{x^m}=x^{\frac{m}{n}}}$$

Zadatak 3

Pomoću binomnog teorema raspišite i sredite binom $\left(\sqrt[3]{x}+x^2\right)^4$.

Rješenje

$$(\underbrace{\sqrt[3]{x}}^{a}+\overbrace{x^2}^{b})^4=\binom{4}{0}\sqrt[3]{x}^{\,4}\left(x^2\right)^0+\binom{4}{1}\sqrt[3]{x}^{\,3}\left(x^2\right)^1+$$

$$+\binom{4}{2}\sqrt[3]{x}^{\,2}\left(x^2\right)^2+\binom{4}{3}\sqrt[3]{x}^{\,1}\left(x^2\right)^3+\binom{4}{4}\sqrt[3]{x}^{\,0}\left(x^2\right)^4=$$

$$=1\cdot x^{\frac{4}{3}}\cdot 1$$

$$\boxed{\sqrt[n]{x^m}=x^{\frac{m}{n}}}$$

Zadatak 3

Pomoću binomnog teorema raspišite i sredite binom $\left(\sqrt[3]{x}+x^2\right)^4$.

Rješenje

$$(\overset{a}{\sqrt[3]{x}}+\overset{b}{x^2})^4=\binom{4}{0}\sqrt[3]{x}^{\,4}\left(x^2\right)^0+\binom{4}{1}\sqrt[3]{x}^{\,3}\left(x^2\right)^1+$$

$$+\binom{4}{2}\sqrt[3]{x}^{\,2}\left(x^2\right)^2+\binom{4}{3}\sqrt[3]{x}^{\,1}\left(x^2\right)^3+\binom{4}{4}\sqrt[3]{x}^{\,0}\left(x^2\right)^4=$$

$$=1\cdot x^{\frac{4}{3}}\cdot 1+$$

$$\boxed{\sqrt[n]{x^m}=x^{\frac{m}{n}}}$$

Zadatak 3

Pomoću binomnog teorema raspišite i sredite binom $\left(\sqrt[3]{x} + x^2\right)^4$.

Rješenje

$$\left(\overset{a}{\sqrt[3]{x}} + \overset{b}{x^2}\right)^4 = \binom{4}{0}\sqrt[3]{x}^{\,4}\left(x^2\right)^0 + \binom{4}{1}\sqrt[3]{x}^{\,3}\left(x^2\right)^1 +$$

$$+ \binom{4}{2}\sqrt[3]{x}^{\,2}\left(x^2\right)^2 + \binom{4}{3}\sqrt[3]{x}^{\,1}\left(x^2\right)^3 + \binom{4}{4}\sqrt[3]{x}^{\,0}\left(x^2\right)^4 =$$

$$= 1 \cdot x^{\frac{4}{3}} \cdot 1 + 4$$

$$\boxed{\sqrt[n]{x^m} = x^{\frac{m}{n}}}$$

Zadatak 3

Pomoću binomnog teorema raspišite i sredite binom $\left(\sqrt[3]{x} + x^2\right)^4$.

Rješenje

$$(\underset{a}{\boxed{\sqrt[3]{x}}} + \underset{b}{\boxed{x^2}})^4 = \binom{4}{0}\sqrt[3]{x}^{\,4}\left(x^2\right)^0 + \binom{4}{1}\sqrt[3]{x}^{\,3}\left(x^2\right)^1 +$$

$$+\binom{4}{2}\sqrt[3]{x}^{\,2}\left(x^2\right)^2 + \binom{4}{3}\sqrt[3]{x}^{\,1}\left(x^2\right)^3 + \binom{4}{4}\sqrt[3]{x}^{\,0}\left(x^2\right)^4 =$$

$$= 1 \cdot x^{\frac{4}{3}} \cdot 1 + 4 \cdot x$$

$$\boxed{\sqrt[n]{x^m} = x^{\frac{m}{n}}}$$

Zadatak 3

Pomoću binomnog teorema raspišite i sredite binom $\left(\sqrt[3]{x}+x^2\right)^4$.

Rješenje

$$\Big(\underset{a}{\boxed{\sqrt[3]{x}}}+\underset{b}{\boxed{x^2}}\Big)^4 = \binom{4}{0}\sqrt[3]{x}^{\,4}\left(x^2\right)^0 + \binom{4}{1}\sqrt[3]{x}^{\,3}\left(x^2\right)^1 +$$

$$+\binom{4}{2}\sqrt[3]{x}^{\,2}\left(x^2\right)^2 + \binom{4}{3}\sqrt[3]{x}^{\,1}\left(x^2\right)^3 + \binom{4}{4}\sqrt[3]{x}^{\,0}\left(x^2\right)^4 =$$

$$= 1\cdot x^{\frac{4}{3}}\cdot 1 + 4\cdot x\cdot x^2$$

$$\boxed{\sqrt[n]{x^m} = x^{\frac{m}{n}}}$$

$$\boxed{\left(x^m\right)^n = x^{mn}}$$

Zadatak 3

Pomoću binomnog teorema raspišite i sredite binom $\left(\sqrt[3]{x}+x^2\right)^4$.

Rješenje

$$(\overset{a}{\boxed{\sqrt[3]{x}}}+\overset{b}{\boxed{x^2}})^4 = \binom{4}{0}\sqrt[3]{x}^{\,4}\left(x^2\right)^0 + \binom{4}{1}\sqrt[3]{x}^{\,3}\left(x^2\right)^1 +$$

$$+\binom{4}{2}\sqrt[3]{x}^{\,2}\left(x^2\right)^2 + \binom{4}{3}\sqrt[3]{x}^{\,1}\left(x^2\right)^3 + \binom{4}{4}\sqrt[3]{x}^{\,0}\left(x^2\right)^4 =$$

$$= 1\cdot x^{\frac{4}{3}}\cdot 1 + 4\cdot x\cdot x^2 +$$

$$\boxed{\sqrt[n]{x^m} = x^{\frac{m}{n}}} \qquad \boxed{\left(x^m\right)^n = x^{mn}}$$

Zadatak 3

Pomoću binomnog teorema raspišite i sredite binom $\left(\sqrt[3]{x}+x^2\right)^4$.

Rješenje

$$(\underbrace{\sqrt[3]{x}}^{a}+\underbrace{x^2}^{b})^4=\binom{4}{0}\sqrt[3]{x}^{\,4}\left(x^2\right)^0+\binom{4}{1}\sqrt[3]{x}^{\,3}\left(x^2\right)^1+$$

$$+\binom{4}{2}\sqrt[3]{x}^{\,2}\left(x^2\right)^2+\binom{4}{3}\sqrt[3]{x}^{\,1}\left(x^2\right)^3+\binom{4}{4}\sqrt[3]{x}^{\,0}\left(x^2\right)^4=$$

$$=1\cdot x^{\frac{4}{3}}\cdot 1+4\cdot x\cdot x^2+6$$

$$\boxed{\sqrt[n]{x^m}=x^{\frac{m}{n}}}\qquad\boxed{\left(x^m\right)^n=x^{mn}}$$

Zadatak 3

Pomoću binomnog teorema raspišite i sredite binom $\left(\sqrt[3]{x} + x^2\right)^4$.

Rješenje

$$(\underbrace{\sqrt[3]{x}}_{a} + \underbrace{x^2}_{b})^4 = \binom{4}{0}\sqrt[3]{x}^{\,4}\left(x^2\right)^0 + \binom{4}{1}\sqrt[3]{x}^{\,3}\left(x^2\right)^1 +$$

$$+ \binom{4}{2}\sqrt[3]{x}^{\,2}\left(x^2\right)^2 + \binom{4}{3}\sqrt[3]{x}^{\,1}\left(x^2\right)^3 + \binom{4}{4}\sqrt[3]{x}^{\,0}\left(x^2\right)^4 =$$

$$= 1 \cdot x^{\frac{4}{3}} \cdot 1 + 4 \cdot x \cdot x^2 + 6 \cdot x^{\frac{2}{3}}$$

$$\boxed{\sqrt[n]{x^m} = x^{\frac{m}{n}}} \qquad \boxed{\left(x^m\right)^n = x^{mn}}$$

Zadatak 3

Pomoću binomnog teorema raspišite i sredite binom $\left(\sqrt[3]{x} + x^2\right)^4$.

Rješenje

$$(\underset{a}{\boxed{\sqrt[3]{x}}}+\underset{b}{\boxed{x^2}})^4 = \binom{4}{0}\sqrt[3]{x}^{\,4}\left(x^2\right)^0 + \binom{4}{1}\sqrt[3]{x}^{\,3}\left(x^2\right)^1 +$$

$$+\binom{4}{2}\sqrt[3]{x}^{\,2}\left(x^2\right)^2 + \binom{4}{3}\sqrt[3]{x}^{\,1}\left(x^2\right)^3 + \binom{4}{4}\sqrt[3]{x}^{\,0}\left(x^2\right)^4 =$$

$$= 1 \cdot x^{\frac{4}{3}} \cdot 1 + 4 \cdot x \cdot x^2 + 6 \cdot x^{\frac{2}{3}} \cdot x^4$$

$$\boxed{\sqrt[n]{x^m} = x^{\frac{m}{n}}} \qquad \boxed{\left(x^m\right)^n = x^{mn}}$$

Zadatak 3

Pomoću binomnog teorema raspišite i sredite binom $\left(\sqrt[3]{x}+x^2\right)^4$.

Rješenje

$$(\underbrace{\sqrt[3]{x}}^{a}+\overbrace{x^2}^{b})^4=\binom{4}{0}\sqrt[3]{x}^{\,4}\left(x^2\right)^0+\binom{4}{1}\sqrt[3]{x}^{\,3}\left(x^2\right)^1+$$

$$+\binom{4}{2}\sqrt[3]{x}^{\,2}\left(x^2\right)^2+\binom{4}{3}\sqrt[3]{x}^{\,1}\left(x^2\right)^3+\binom{4}{4}\sqrt[3]{x}^{\,0}\left(x^2\right)^4=$$

$$=1\cdot x^{\frac{4}{3}}\cdot 1+4\cdot x\cdot x^2+6\cdot x^{\frac{2}{3}}\cdot x^4+$$

$$\boxed{\sqrt[n]{x^m}=x^{\frac{m}{n}}} \qquad \boxed{\left(x^m\right)^n=x^{mn}}$$

Zadatak 3

Pomoću binomnog teorema raspišite i sredite binom $\left(\sqrt[3]{x}+x^2\right)^4$.

Rješenje

$$\Big(\overset{a}{\boxed{\sqrt[3]{x}}}+\overset{b}{\boxed{x^2}}\Big)^4=\binom{4}{0}\sqrt[3]{x}^{\,4}\left(x^2\right)^0+\binom{4}{1}\sqrt[3]{x}^{\,3}\left(x^2\right)^1+$$

$$+\binom{4}{2}\sqrt[3]{x}^{\,2}\left(x^2\right)^2+\binom{4}{3}\sqrt[3]{x}^{\,1}\left(x^2\right)^3+\binom{4}{4}\sqrt[3]{x}^{\,0}\left(x^2\right)^4=$$

$$=1\cdot x^{\frac{4}{3}}\cdot 1+4\cdot x\cdot x^2+6\cdot x^{\frac{2}{3}}\cdot x^4+4$$

$$\boxed{\sqrt[n]{x^m}=x^{\frac{m}{n}}}\qquad\boxed{\left(x^m\right)^n=x^{mn}}$$

Zadatak 3

Pomoću binomnog teorema raspišite i sredite binom $\left(\sqrt[3]{x}+x^2\right)^4$.

Rješenje

$$(\underbrace{\boxed{\sqrt[3]{x}}}_{a}+\underbrace{\boxed{x^2}}_{b})^4=\binom{4}{0}\sqrt[3]{x}^{\,4}\left(x^2\right)^0+\binom{4}{1}\sqrt[3]{x}^{\,3}\left(x^2\right)^1+$$

$$+\binom{4}{2}\sqrt[3]{x}^{\,2}\left(x^2\right)^2+\binom{4}{3}\sqrt[3]{x}^{\,1}\left(x^2\right)^3+\binom{4}{4}\sqrt[3]{x}^{\,0}\left(x^2\right)^4=$$

$$=1\cdot x^{\frac{4}{3}}\cdot 1+4\cdot x\cdot x^2+6\cdot x^{\frac{2}{3}}\cdot x^4+4\cdot x^{\frac{1}{3}}$$

$$\boxed{\sqrt[n]{x^m}=x^{\frac{m}{n}}}\qquad\boxed{\left(x^m\right)^n=x^{mn}}$$

Zadatak 3

Pomoću binomnog teorema raspišite i sredite binom $\left(\sqrt[3]{x}+x^2\right)^4$.

Rješenje

$$\Big(\underbrace{\boxed{\sqrt[3]{x}}}_{}\!\!\!\!\!\!\overset{a}{} + \overset{b}{\boxed{x^2}}\Big)^4 = \binom{4}{0}\sqrt[3]{x}^{\,4}\left(x^2\right)^0 + \binom{4}{1}\sqrt[3]{x}^{\,3}\left(x^2\right)^1 +$$

$$+\binom{4}{2}\sqrt[3]{x}^{\,2}\left(x^2\right)^2 + \binom{4}{3}\sqrt[3]{x}^{\,1}\left(x^2\right)^3 + \binom{4}{4}\sqrt[3]{x}^{\,0}\left(x^2\right)^4 =$$

$$= 1\cdot x^{\frac{4}{3}}\cdot 1 + 4\cdot x\cdot x^2 + 6\cdot x^{\frac{2}{3}}\cdot x^4 + 4\cdot x^{\frac{1}{3}}\cdot x^6$$

$$\boxed{\sqrt[n]{x^m} = x^{\frac{m}{n}}} \qquad \boxed{\left(x^m\right)^n = x^{mn}}$$

Zadatak 3

Pomoću binomnog teorema raspišite i sredite binom $\left(\sqrt[3]{x}+x^2\right)^4$.

Rješenje

$$\left(\overset{a}{\boxed{\sqrt[3]{x}}}+\overset{b}{\boxed{x^2}}\right)^4=\binom{4}{0}\sqrt[3]{x}^{\,4}\left(x^2\right)^0+\binom{4}{1}\sqrt[3]{x}^{\,3}\left(x^2\right)^1+$$

$$+\binom{4}{2}\sqrt[3]{x}^{\,2}\left(x^2\right)^2+\binom{4}{3}\sqrt[3]{x}^{\,1}\left(x^2\right)^3+\binom{4}{4}\sqrt[3]{x}^{\,0}\left(x^2\right)^4=$$

$$=1\cdot x^{\frac{4}{3}}\cdot 1+4\cdot x\cdot x^2+6\cdot x^{\frac{2}{3}}\cdot x^4+4\cdot x^{\frac{1}{3}}\cdot x^6+$$

$$\boxed{\sqrt[n]{x^m}=x^{\frac{m}{n}}}\qquad\boxed{\left(x^m\right)^n=x^{mn}}$$

Zadatak 3

Pomoću binomnog teorema raspišite i sredite binom $\left(\sqrt[3]{x}+x^2\right)^4$.

Rješenje

$$(\underbrace{\sqrt[3]{x}}^{a}+\underbrace{x^2}^{b})^4=\binom{4}{0}\sqrt[3]{x}^{\,4}\left(x^2\right)^0+\binom{4}{1}\sqrt[3]{x}^{\,3}\left(x^2\right)^1+$$

$$+\binom{4}{2}\sqrt[3]{x}^{\,2}\left(x^2\right)^2+\binom{4}{3}\sqrt[3]{x}^{\,1}\left(x^2\right)^3+\binom{4}{4}\sqrt[3]{x}^{\,0}\left(x^2\right)^4=$$

$$=1\cdot x^{\frac{4}{3}}\cdot 1+4\cdot x\cdot x^2+6\cdot x^{\frac{2}{3}}\cdot x^4+4\cdot x^{\frac{1}{3}}\cdot x^6+1$$

$$\boxed{\sqrt[n]{x^m}=x^{\frac{m}{n}}}\qquad\boxed{\left(x^m\right)^n=x^{mn}}$$

Zadatak 3

Pomoću binomnog teorema raspišite i sredite binom $\left(\sqrt[3]{x}+x^2\right)^4$.

Rješenje

$$(\overset{a}{\boxed{\sqrt[3]{x}}}+\overset{b}{\boxed{x^2}})^4=\binom{4}{0}\sqrt[3]{x}^{\,4}\left(x^2\right)^0+\binom{4}{1}\sqrt[3]{x}^{\,3}\left(x^2\right)^1+$$

$$+\binom{4}{2}\sqrt[3]{x}^{\,2}\left(x^2\right)^2+\binom{4}{3}\sqrt[3]{x}^{\,1}\left(x^2\right)^3+\binom{4}{4}\sqrt[3]{x}^{\,0}\left(x^2\right)^4=$$

$$=1\cdot x^{\frac{4}{3}}\cdot 1+4\cdot x\cdot x^2+6\cdot x^{\frac{2}{3}}\cdot x^4+4\cdot x^{\frac{1}{3}}\cdot x^6+1\cdot 1$$

$$\boxed{\sqrt[n]{x^m}=x^{\frac{m}{n}}}\qquad\boxed{\left(x^m\right)^n=x^{mn}}$$

Zadatak 3

Pomoću binomnog teorema raspišite i sredite binom $\left(\sqrt[3]{x}+x^2\right)^4$.

Rješenje

$$\left(\underbrace{\boxed{\sqrt[3]{x}}}_{a}+\underbrace{\boxed{x^2}}_{b}\right)^4=\binom{4}{0}\sqrt[3]{x}^{\,4}\left(x^2\right)^0+\binom{4}{1}\sqrt[3]{x}^{\,3}\left(x^2\right)^1+$$

$$+\binom{4}{2}\sqrt[3]{x}^{\,2}\left(x^2\right)^2+\binom{4}{3}\sqrt[3]{x}^{\,1}\left(x^2\right)^3+\binom{4}{4}\sqrt[3]{x}^{\,0}\left(x^2\right)^4=$$

$$=1\cdot x^{\frac{4}{3}}\cdot 1+4\cdot x\cdot x^2+6\cdot x^{\frac{2}{3}}\cdot x^4+4\cdot x^{\frac{1}{3}}\cdot x^6+1\cdot 1\cdot x^8$$

$$\boxed{\sqrt[n]{x^m}=x^{\frac{m}{n}}} \qquad \boxed{\left(x^m\right)^n=x^{mn}}$$

Zadatak 3

Pomoću binomnog teorema raspišite i sredite binom $\left(\sqrt[3]{x}+x^2\right)^4$.

Rješenje

$$\Big(\underbrace{\boxed{\sqrt[3]{x}}}_{a}+\underbrace{\boxed{x^2}}_{b}\Big)^4 = \binom{4}{0}\sqrt[3]{x}^{\,4}\left(x^2\right)^0 + \binom{4}{1}\sqrt[3]{x}^{\,3}\left(x^2\right)^1 +$$

$$+\binom{4}{2}\sqrt[3]{x}^{\,2}\left(x^2\right)^2 + \binom{4}{3}\sqrt[3]{x}^{\,1}\left(x^2\right)^3 + \binom{4}{4}\sqrt[3]{x}^{\,0}\left(x^2\right)^4 =$$

$$= 1\cdot x^{\frac{4}{3}}\cdot 1 + 4\cdot x\cdot x^2 + 6\cdot x^{\frac{2}{3}}\cdot x^4 + 4\cdot x^{\frac{1}{3}}\cdot x^6 + 1\cdot 1\cdot x^8 =$$

$$=$$

$$\boxed{\sqrt[n]{x^m} = x^{\frac{m}{n}}} \qquad \boxed{\left(x^m\right)^n = x^{mn}}$$

Zadatak 3

Pomoću binomnog teorema raspišite i sredite binom $\left(\sqrt[3]{x}+x^2\right)^4$.

Rješenje

$$\Big(\overset{a}{\boxed{\sqrt[3]{x}}}+\overset{b}{\boxed{x^2}}\Big)^4=\binom{4}{0}\sqrt[3]{x}^{\,4}\left(x^2\right)^0+\binom{4}{1}\sqrt[3]{x}^{\,3}\left(x^2\right)^1+$$

$$+\binom{4}{2}\sqrt[3]{x}^{\,2}\left(x^2\right)^2+\binom{4}{3}\sqrt[3]{x}^{\,1}\left(x^2\right)^3+\binom{4}{4}\sqrt[3]{x}^{\,0}\left(x^2\right)^4=$$

$$=1\cdot x^{\frac{4}{3}}\cdot 1+4\cdot x\cdot x^2+6\cdot x^{\frac{2}{3}}\cdot x^4+4\cdot x^{\frac{1}{3}}\cdot x^6+1\cdot 1\cdot x^8=$$

$$=x^{\frac{4}{3}}$$

$$\boxed{\sqrt[n]{x^m}=x^{\frac{m}{n}}} \qquad \boxed{\left(x^m\right)^n=x^{mn}}$$

Zadatak 3

Pomoću binomnog teorema raspišite i sredite binom $\left(\sqrt[3]{x} + x^2\right)^4$.

Rješenje

$$\Big(\overset{a}{\sqrt[3]{x}} + \overset{b}{x^2}\Big)^4 = \binom{4}{0}\sqrt[3]{x}^{\,4}\left(x^2\right)^0 + \binom{4}{1}\sqrt[3]{x}^{\,3}\left(x^2\right)^1 +$$

$$+\binom{4}{2}\sqrt[3]{x}^{\,2}\left(x^2\right)^2 + \binom{4}{3}\sqrt[3]{x}^{\,1}\left(x^2\right)^3 + \binom{4}{4}\sqrt[3]{x}^{\,0}\left(x^2\right)^4 =$$

$$= 1 \cdot x^{\frac{4}{3}} \cdot 1 + 4 \cdot x \cdot x^2 + 6 \cdot x^{\frac{2}{3}} \cdot x^4 + 4 \cdot x^{\frac{1}{3}} \cdot x^6 + 1 \cdot 1 \cdot x^8 =$$

$$= x^{\frac{4}{3}} + 4x^3$$

$\boxed{\sqrt[n]{x^m} = x^{\frac{m}{n}}}$ $\boxed{\left(x^m\right)^n = x^{mn}}$ $\boxed{x^m \cdot x^n = x^{m+n}}$

Zadatak 3

Pomoću binomnog teorema raspišite i sredite binom $\left(\sqrt[3]{x}+x^2\right)^4$.

Rješenje

$$\Big(\overset{a}{\boxed{\sqrt[3]{x}}}+\overset{b}{\boxed{x^2}}\Big)^4=\binom{4}{0}\sqrt[3]{x}^{\,4}\left(x^2\right)^0+\binom{4}{1}\sqrt[3]{x}^{\,3}\left(x^2\right)^1+$$

$$+\binom{4}{2}\sqrt[3]{x}^{\,2}\left(x^2\right)^2+\binom{4}{3}\sqrt[3]{x}^{\,1}\left(x^2\right)^3+\binom{4}{4}\sqrt[3]{x}^{\,0}\left(x^2\right)^4=$$

$$=1\cdot x^{\frac{4}{3}}\cdot 1+4\cdot x\cdot x^2+6\cdot x^{\frac{2}{3}}\cdot x^4+4\cdot x^{\frac{1}{3}}\cdot x^6+1\cdot 1\cdot x^8=$$

$$=x^{\frac{4}{3}}+4x^3+6x^{\frac{14}{3}}$$

$\boxed{\sqrt[n]{x^m}=x^{\frac{m}{n}}}$ $\boxed{\left(x^m\right)^n=x^{mn}}$ $\boxed{x^m\cdot x^n=x^{m+n}}$

Zadatak 3

Pomoću binomnog teorema raspišite i sredite binom $\left(\sqrt[3]{x}+x^2\right)^4$.

Rješenje

$$(\overset{a}{\boxed{\sqrt[3]{x}}}+\overset{b}{\boxed{x^2}})^4=\binom{4}{0}\sqrt[3]{x}^{\,4}\left(x^2\right)^0+\binom{4}{1}\sqrt[3]{x}^{\,3}\left(x^2\right)^1+$$

$$+\binom{4}{2}\sqrt[3]{x}^{\,2}\left(x^2\right)^2+\binom{4}{3}\sqrt[3]{x}^{\,1}\left(x^2\right)^3+\binom{4}{4}\sqrt[3]{x}^{\,0}\left(x^2\right)^4=$$

$$=1\cdot x^{\frac{4}{3}}\cdot 1+4\cdot x\cdot x^2+6\cdot x^{\frac{2}{3}}\cdot x^4+4\cdot x^{\frac{1}{3}}\cdot x^6+1\cdot 1\cdot x^8=$$

$$=x^{\frac{4}{3}}+4x^3+6x^{\frac{14}{3}}+4x^{\frac{19}{3}}$$

$$\boxed{\sqrt[n]{x^m}=x^{\frac{m}{n}}}\qquad\boxed{\left(x^m\right)^n=x^{mn}}\qquad\boxed{x^m\cdot x^n=x^{m+n}}$$

Zadatak 3

Pomoću binomnog teorema raspišite i sredite binom $\left(\sqrt[3]{x}+x^2\right)^4$.

Rješenje

$$(\overset{a}{\boxed{\sqrt[3]{x}}}+\overset{b}{\boxed{x^2}})^4=\binom{4}{0}\sqrt[3]{x}^{\,4}\left(x^2\right)^0+\binom{4}{1}\sqrt[3]{x}^{\,3}\left(x^2\right)^1+$$

$$+\binom{4}{2}\sqrt[3]{x}^{\,2}\left(x^2\right)^2+\binom{4}{3}\sqrt[3]{x}^{\,1}\left(x^2\right)^3+\binom{4}{4}\sqrt[3]{x}^{\,0}\left(x^2\right)^4=$$

$$=1\cdot x^{\frac{4}{3}}\cdot 1+4\cdot x\cdot x^2+6\cdot x^{\frac{2}{3}}\cdot x^4+4\cdot x^{\frac{1}{3}}\cdot x^6+1\cdot 1\cdot x^8=$$

$$=x^{\frac{4}{3}}+4x^3+6x^{\frac{14}{3}}+4x^{\frac{19}{3}}+x^8$$

$\boxed{\sqrt[n]{x^m}=x^{\frac{m}{n}}}$ $\boxed{\left(x^m\right)^n=x^{mn}}$ $\boxed{x^m\cdot x^n=x^{m+n}}$

Domaća zadaća

Zadatak

Pomoću binomnog teorema raspišite i sredite binom $\left(\sqrt[3]{x} - x^2\right)^4$.

Domaća zadaća

Zadatak

Pomoću binomnog teorema raspišite i sredite binom $\left(\sqrt[3]{x}-x^2\right)^4$.

Rješenje

$$\left(\sqrt[3]{x}+(-x^2)\right)^4=\binom{4}{0}\sqrt[3]{x}^{\,4}\left(-x^2\right)^0+\binom{4}{1}\sqrt[3]{x}^{\,3}\left(-x^2\right)^1+$$

$$+\binom{4}{2}\sqrt[3]{x}^{\,2}\left(-x^2\right)^2+\binom{4}{3}\sqrt[3]{x}^{\,1}\left(-x^2\right)^3+\binom{4}{4}\sqrt[3]{x}^{\,0}\left(-x^2\right)^4=$$

$$=1\cdot x^{\frac{4}{3}}\cdot 1-4\cdot x\cdot x^2+6\cdot x^{\frac{2}{3}}\cdot x^4-4\cdot x^{\frac{1}{3}}\cdot x^6+1\cdot 1\cdot x^8=$$

$$=x^{\frac{4}{3}}-4x^3+6x^{\frac{14}{3}}-4x^{\frac{19}{3}}+x^8$$

četvrti zadatak

Zadatak 4

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y + y^{-1}\right)^5$.

Zadatak 4

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y + y^{-1}\right)^5$.

Rješenje

$$\left(x^{\frac{3}{2}}y + y^{-1}\right)^5 =$$

Zadatak 4

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y + y^{-1}\right)^5$.

Rješenje

$$\left(\overset{a}{\boxed{x^{\frac{3}{2}}y}} + y^{-1}\right)^5 =$$

Zadatak 4

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y + y^{-1}\right)^5$.

Rješenje

$$\left(\overset{a}{\boxed{x^{\frac{3}{2}}y}} + \overset{b}{\boxed{y^{-1}}}\right)^5 =$$

Zadatak 4

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y + y^{-1}\right)^5$.

Rješenje

$$\Big(\overset{a}{\boxed{x^{\frac{3}{2}}y}}+\overset{b}{\boxed{y^{-1}}}\Big)^5 = \binom{5}{0}$$

Zadatak 4

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y + y^{-1}\right)^5$.

Rješenje

$$\Big(\overset{a}{\boxed{x^{\frac{3}{2}}y}}+\overset{b}{\boxed{y^{-1}}}\Big)^5 = \binom{5}{0}\left(x^{\frac{3}{2}}y\right)^5$$

Zadatak 4

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y + y^{-1}\right)^5$.

Rješenje

$$\Big(\overset{a}{\boxed{x^{\frac{3}{2}}y}} + \overset{b}{\boxed{y^{-1}}}\Big)^5 = \binom{5}{0}\left(x^{\frac{3}{2}}y\right)^5\left(y^{-1}\right)^0$$

Zadatak 4

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y + y^{-1}\right)^5$.

Rješenje

$$\Big(\overset{a}{\boxed{x^{\frac{3}{2}}y}} + \overset{b}{\boxed{y^{-1}}}\Big)^5 = \binom{5}{0}\left(x^{\frac{3}{2}}y\right)^5\left(y^{-1}\right)^0 +$$

Zadatak 4

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y + y^{-1}\right)^5$.

Rješenje

$$\Big(\overset{a}{\boxed{x^{\frac{3}{2}}y}}+\overset{b}{\boxed{y^{-1}}}\Big)^5 = \binom{5}{0}\left(x^{\frac{3}{2}}y\right)^5\left(y^{-1}\right)^0 + \binom{5}{1}$$

Zadatak 4

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y + y^{-1}\right)^5$.

Rješenje

$$\Big(\overset{a}{\boxed{x^{\frac{3}{2}}y}}+\overset{b}{\boxed{y^{-1}}}\Big)^5 = \binom{5}{0}\left(x^{\frac{3}{2}}y\right)^5\left(y^{-1}\right)^0 + \binom{5}{1}\left(x^{\frac{3}{2}}y\right)^4$$

Zadatak 4

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y + y^{-1}\right)^5$.

Rješenje

$$\Big(\overset{a}{\boxed{x^{\frac{3}{2}}y}} + \overset{b}{\boxed{y^{-1}}}\Big)^5 = \binom{5}{0}\left(x^{\frac{3}{2}}y\right)^5\left(y^{-1}\right)^0 + \binom{5}{1}\left(x^{\frac{3}{2}}y\right)^4\left(y^{-1}\right)^1$$

Zadatak 4

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y+y^{-1}\right)^5$.

Rješenje

$$\Big(\overbrace{\boxed{x^{\frac{3}{2}}y}}^{a}+\overbrace{\boxed{y^{-1}}}^{b}\Big)^5=\binom{5}{0}\left(x^{\frac{3}{2}}y\right)^5\left(y^{-1}\right)^0+\binom{5}{1}\left(x^{\frac{3}{2}}y\right)^4\left(y^{-1}\right)^1+$$

$$+$$

Zadatak 4

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y + y^{-1}\right)^5$.

Rješenje

$$\Big(\underbrace{\boxed{x^{\frac{3}{2}}y}}^{a}+\overbrace{\boxed{y^{-1}}}^{b}\Big)^5 = \binom{5}{0}\left(x^{\frac{3}{2}}y\right)^5\left(y^{-1}\right)^0 + \binom{5}{1}\left(x^{\frac{3}{2}}y\right)^4\left(y^{-1}\right)^1 +$$

$$+\binom{5}{2}$$

Zadatak 4

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y + y^{-1}\right)^5$.

Rješenje

$$\Big(\overset{a}{\boxed{x^{\frac{3}{2}}y}}+\overset{b}{\boxed{y^{-1}}}\Big)^5 = \binom{5}{0}\left(x^{\frac{3}{2}}y\right)^5\left(y^{-1}\right)^0 + \binom{5}{1}\left(x^{\frac{3}{2}}y\right)^4\left(y^{-1}\right)^1 +$$

$$+ \binom{5}{2}\left(x^{\frac{3}{2}}y\right)^3$$

Zadatak 4

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y + y^{-1}\right)^5$.

Rješenje

$$\Big(\overset{a}{\boxed{x^{\frac{3}{2}}y}} + \overset{b}{\boxed{y^{-1}}}\Big)^5 = \binom{5}{0}\left(x^{\frac{3}{2}}y\right)^5\left(y^{-1}\right)^0 + \binom{5}{1}\left(x^{\frac{3}{2}}y\right)^4\left(y^{-1}\right)^1 +$$

$$+\binom{5}{2}\left(x^{\frac{3}{2}}y\right)^3\left(y^{-1}\right)^2$$

Zadatak 4

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y + y^{-1}\right)^5$.

Rješenje

$$\Big(\overset{a}{\boxed{x^{\frac{3}{2}}y}}+\overset{b}{\boxed{y^{-1}}}\Big)^5 = \binom{5}{0}\left(x^{\frac{3}{2}}y\right)^5\left(y^{-1}\right)^0 + \binom{5}{1}\left(x^{\frac{3}{2}}y\right)^4\left(y^{-1}\right)^1 +$$

$$+ \binom{5}{2}\left(x^{\frac{3}{2}}y\right)^3\left(y^{-1}\right)^2 +$$

Zadatak 4

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y + y^{-1}\right)^5$.

Rješenje

$$\Big(\overset{a}{\boxed{x^{\frac{3}{2}}y}}+\overset{b}{\boxed{y^{-1}}}\Big)^5 = \binom{5}{0}\left(x^{\frac{3}{2}}y\right)^5\left(y^{-1}\right)^0 + \binom{5}{1}\left(x^{\frac{3}{2}}y\right)^4\left(y^{-1}\right)^1 +$$

$$+ \binom{5}{2}\left(x^{\frac{3}{2}}y\right)^3\left(y^{-1}\right)^2 + \binom{5}{3}$$

Zadatak 4

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y + y^{-1}\right)^5$.

Rješenje

$$\Big(\overset{a}{\boxed{x^{\frac{3}{2}}y}}+\overset{b}{\boxed{y^{-1}}}\Big)^5 = \binom{5}{0}\left(x^{\frac{3}{2}}y\right)^5\left(y^{-1}\right)^0 + \binom{5}{1}\left(x^{\frac{3}{2}}y\right)^4\left(y^{-1}\right)^1 +$$

$$+ \binom{5}{2}\left(x^{\frac{3}{2}}y\right)^3\left(y^{-1}\right)^2 + \binom{5}{3}\left(x^{\frac{3}{2}}y\right)^2$$

Zadatak 4

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y + y^{-1}\right)^5$.

Rješenje

$$\Big(\overset{a}{\boxed{x^{\frac{3}{2}}y}} + \overset{b}{\boxed{y^{-1}}}\Big)^5 = \binom{5}{0}\left(x^{\frac{3}{2}}y\right)^5\left(y^{-1}\right)^0 + \binom{5}{1}\left(x^{\frac{3}{2}}y\right)^4\left(y^{-1}\right)^1 +$$

$$+ \binom{5}{2}\left(x^{\frac{3}{2}}y\right)^3\left(y^{-1}\right)^2 + \binom{5}{3}\left(x^{\frac{3}{2}}y\right)^2\left(y^{-1}\right)^3$$

Zadatak 4

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y + y^{-1}\right)^5$.

Rješenje

$$\Big(\overset{a}{\boxed{x^{\frac{3}{2}}y}} + \overset{b}{\boxed{y^{-1}}}\Big)^5 = \binom{5}{0}\left(x^{\frac{3}{2}}y\right)^5\left(y^{-1}\right)^0 + \binom{5}{1}\left(x^{\frac{3}{2}}y\right)^4\left(y^{-1}\right)^1 +$$

$$+\binom{5}{2}\left(x^{\frac{3}{2}}y\right)^3\left(y^{-1}\right)^2 + \binom{5}{3}\left(x^{\frac{3}{2}}y\right)^2\left(y^{-1}\right)^3 +$$

Zadatak 4

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y + y^{-1}\right)^5$.

Rješenje

$$\Big(\overset{a}{\boxed{x^{\frac{3}{2}}y}} + \overset{b}{\boxed{y^{-1}}}\Big)^5 = \binom{5}{0}\left(x^{\frac{3}{2}}y\right)^5\left(y^{-1}\right)^0 + \binom{5}{1}\left(x^{\frac{3}{2}}y\right)^4\left(y^{-1}\right)^1 +$$

$$+ \binom{5}{2}\left(x^{\frac{3}{2}}y\right)^3\left(y^{-1}\right)^2 + \binom{5}{3}\left(x^{\frac{3}{2}}y\right)^2\left(y^{-1}\right)^3 + \binom{5}{4}$$

Zadatak 4

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y + y^{-1}\right)^5$.

Rješenje

$$\Big(\overset{a}{\boxed{x^{\frac{3}{2}}y}} + \overset{b}{\boxed{y^{-1}}}\Big)^5 = \binom{5}{0}\left(x^{\frac{3}{2}}y\right)^5\left(y^{-1}\right)^0 + \binom{5}{1}\left(x^{\frac{3}{2}}y\right)^4\left(y^{-1}\right)^1 +$$

$$+ \binom{5}{2}\left(x^{\frac{3}{2}}y\right)^3\left(y^{-1}\right)^2 + \binom{5}{3}\left(x^{\frac{3}{2}}y\right)^2\left(y^{-1}\right)^3 + \binom{5}{4}\left(x^{\frac{3}{2}}y\right)^1$$

Zadatak 4

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y + y^{-1}\right)^5$.

Rješenje

$$\Big(\overset{a}{\boxed{x^{\frac{3}{2}}y}}+\overset{b}{\boxed{y^{-1}}}\Big)^5 = \binom{5}{0}\left(x^{\frac{3}{2}}y\right)^5\left(y^{-1}\right)^0 + \binom{5}{1}\left(x^{\frac{3}{2}}y\right)^4\left(y^{-1}\right)^1 +$$

$$+\binom{5}{2}\left(x^{\frac{3}{2}}y\right)^3\left(y^{-1}\right)^2 + \binom{5}{3}\left(x^{\frac{3}{2}}y\right)^2\left(y^{-1}\right)^3 + \binom{5}{4}\left(x^{\frac{3}{2}}y\right)^1\left(y^{-1}\right)^4$$

Zadatak 4

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y + y^{-1}\right)^5$.

Rješenje

$$\Big(\overset{a}{\boxed{x^{\frac{3}{2}}y}}+\overset{b}{\boxed{y^{-1}}}\Big)^5 = \binom{5}{0}\left(x^{\frac{3}{2}}y\right)^5\left(y^{-1}\right)^0 + \binom{5}{1}\left(x^{\frac{3}{2}}y\right)^4\left(y^{-1}\right)^1 +$$

$$+ \binom{5}{2}\left(x^{\frac{3}{2}}y\right)^3\left(y^{-1}\right)^2 + \binom{5}{3}\left(x^{\frac{3}{2}}y\right)^2\left(y^{-1}\right)^3 + \binom{5}{4}\left(x^{\frac{3}{2}}y\right)^1\left(y^{-1}\right)^4 +$$

$$+$$

Zadatak 4

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y + y^{-1}\right)^5$.

Rješenje

$$\Big(\overset{a}{\boxed{x^{\frac{3}{2}}y}}+\overset{b}{\boxed{y^{-1}}}\Big)^5 = \binom{5}{0}\left(x^{\frac{3}{2}}y\right)^5\left(y^{-1}\right)^0 + \binom{5}{1}\left(x^{\frac{3}{2}}y\right)^4\left(y^{-1}\right)^1 +$$

$$+ \binom{5}{2}\left(x^{\frac{3}{2}}y\right)^3\left(y^{-1}\right)^2 + \binom{5}{3}\left(x^{\frac{3}{2}}y\right)^2\left(y^{-1}\right)^3 + \binom{5}{4}\left(x^{\frac{3}{2}}y\right)^1\left(y^{-1}\right)^4 +$$

$$+ \binom{5}{5}$$

Zadatak 4

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y+y^{-1}\right)^5$.

Rješenje

$$\Big(\overset{a}{\boxed{x^{\frac{3}{2}}y}}+\overset{b}{\boxed{y^{-1}}}\Big)^5=\binom{5}{0}\left(x^{\frac{3}{2}}y\right)^5\left(y^{-1}\right)^0+\binom{5}{1}\left(x^{\frac{3}{2}}y\right)^4\left(y^{-1}\right)^1+$$

$$+\binom{5}{2}\left(x^{\frac{3}{2}}y\right)^3\left(y^{-1}\right)^2+\binom{5}{3}\left(x^{\frac{3}{2}}y\right)^2\left(y^{-1}\right)^3+\binom{5}{4}\left(x^{\frac{3}{2}}y\right)^1\left(y^{-1}\right)^4+$$

$$+\binom{5}{5}\left(x^{\frac{3}{2}}y\right)^0$$

Zadatak 4

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y + y^{-1}\right)^5$.

Rješenje

$$\Bigl(\overset{a}{\boxed{x^{\frac{3}{2}}y}}+\overset{b}{\boxed{y^{-1}}}\Bigr)^5 = \binom{5}{0}\left(x^{\frac{3}{2}}y\right)^5\left(y^{-1}\right)^0 + \binom{5}{1}\left(x^{\frac{3}{2}}y\right)^4\left(y^{-1}\right)^1 +$$

$$+\binom{5}{2}\left(x^{\frac{3}{2}}y\right)^3\left(y^{-1}\right)^2 + \binom{5}{3}\left(x^{\frac{3}{2}}y\right)^2\left(y^{-1}\right)^3 + \binom{5}{4}\left(x^{\frac{3}{2}}y\right)^1\left(y^{-1}\right)^4 +$$

$$+\binom{5}{5}\left(x^{\frac{3}{2}}y\right)^0\left(y^{-1}\right)^5$$

Zadatak 4

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y + y^{-1}\right)^5$.

Rješenje

$$\Big(\overset{a}{\boxed{x^{\frac{3}{2}}y}}+\overset{b}{\boxed{y^{-1}}}\Big)^5 = \binom{5}{0}\left(x^{\frac{3}{2}}y\right)^5\left(y^{-1}\right)^0 + \binom{5}{1}\left(x^{\frac{3}{2}}y\right)^4\left(y^{-1}\right)^1 +$$

$$+ \binom{5}{2}\left(x^{\frac{3}{2}}y\right)^3\left(y^{-1}\right)^2 + \binom{5}{3}\left(x^{\frac{3}{2}}y\right)^2\left(y^{-1}\right)^3 + \binom{5}{4}\left(x^{\frac{3}{2}}y\right)^1\left(y^{-1}\right)^4 +$$

$$+ \binom{5}{5}\left(x^{\frac{3}{2}}y\right)^0\left(y^{-1}\right)^5 =$$

Zadatak 4

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y + y^{-1}\right)^5$.

Rješenje

$$\left(\overset{a}{\boxed{x^{\frac{3}{2}}y}}+\overset{b}{\boxed{y^{-1}}}\right)^5 = \binom{5}{0}\left(x^{\frac{3}{2}}y\right)^5\left(y^{-1}\right)^0 + \binom{5}{1}\left(x^{\frac{3}{2}}y\right)^4\left(y^{-1}\right)^1 +$$

$$+ \binom{5}{2}\left(x^{\frac{3}{2}}y\right)^3\left(y^{-1}\right)^2 + \binom{5}{3}\left(x^{\frac{3}{2}}y\right)^2\left(y^{-1}\right)^3 + \binom{5}{4}\left(x^{\frac{3}{2}}y\right)^1\left(y^{-1}\right)^4 +$$

$$+ \binom{5}{5}\left(x^{\frac{3}{2}}y\right)^0\left(y^{-1}\right)^5 = 1$$

Zadatak 4

$$\boxed{\left(x^m\right)^n = x^{mn}} \qquad \boxed{(xy)^n = x^n y^n}$$

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y + y^{-1}\right)^5$.

Rješenje

$$\Big(\overset{a}{\boxed{x^{\frac{3}{2}}y}}+\overset{b}{\boxed{y^{-1}}}\Big)^5 = \binom{5}{0}\left(x^{\frac{3}{2}}y\right)^5\left(y^{-1}\right)^0 + \binom{5}{1}\left(x^{\frac{3}{2}}y\right)^4\left(y^{-1}\right)^1 +$$

$$+ \binom{5}{2}\left(x^{\frac{3}{2}}y\right)^3\left(y^{-1}\right)^2 + \binom{5}{3}\left(x^{\frac{3}{2}}y\right)^2\left(y^{-1}\right)^3 + \binom{5}{4}\left(x^{\frac{3}{2}}y\right)^1\left(y^{-1}\right)^4 +$$

$$+ \binom{5}{5}\left(x^{\frac{3}{2}}y\right)^0\left(y^{-1}\right)^5 = 1 \cdot$$

Zadatak 4

$$\boxed{\left(x^m\right)^n = x^{mn}} \qquad \boxed{(xy)^n = x^n y^n}$$

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y + y^{-1}\right)^5$.

Rješenje

$$\Big(\overset{a}{\boxed{x^{\frac{3}{2}}y}}+\overset{b}{\boxed{y^{-1}}}\Big)^5 = \binom{5}{0}\left(x^{\frac{3}{2}}y\right)^5\left(y^{-1}\right)^0 + \binom{5}{1}\left(x^{\frac{3}{2}}y\right)^4\left(y^{-1}\right)^1 +$$

$$+\binom{5}{2}\left(x^{\frac{3}{2}}y\right)^3\left(y^{-1}\right)^2 + \binom{5}{3}\left(x^{\frac{3}{2}}y\right)^2\left(y^{-1}\right)^3 + \binom{5}{4}\left(x^{\frac{3}{2}}y\right)^1\left(y^{-1}\right)^4 +$$

$$+\binom{5}{5}\left(x^{\frac{3}{2}}y\right)^0\left(y^{-1}\right)^5 = 1\cdot x^{\frac{15}{2}}y^5$$

Zadatak 4

$$\boxed{\left(x^m\right)^n = x^{mn}} \qquad \boxed{(xy)^n = x^n y^n}$$

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y + y^{-1}\right)^5$.

Rješenje

$$\Big(\overset{a}{\boxed{x^{\frac{3}{2}}y}} + \overset{b}{\boxed{y^{-1}}}\Big)^5 = \binom{5}{0}\left(x^{\frac{3}{2}}y\right)^5\left(y^{-1}\right)^0 + \binom{5}{1}\left(x^{\frac{3}{2}}y\right)^4\left(y^{-1}\right)^1 +$$

$$+ \binom{5}{2}\left(x^{\frac{3}{2}}y\right)^3\left(y^{-1}\right)^2 + \binom{5}{3}\left(x^{\frac{3}{2}}y\right)^2\left(y^{-1}\right)^3 + \binom{5}{4}\left(x^{\frac{3}{2}}y\right)^1\left(y^{-1}\right)^4 +$$

$$+ \binom{5}{5}\left(x^{\frac{3}{2}}y\right)^0\left(y^{-1}\right)^5 = 1 \cdot x^{\frac{15}{2}}y^5 \cdot 1$$

Zadatak 4

$$\boxed{\left(x^{m}\right)^{n}=x^{mn}} \qquad \boxed{(xy)^{n}=x^{n}y^{n}}$$

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y+y^{-1}\right)^{5}$.

Rješenje

$$\Big(\underbrace{\boxed{x^{\frac{3}{2}}y}}_{a}+\underbrace{\boxed{y^{-1}}}_{b}\Big)^{5}=\binom{5}{0}\left(x^{\frac{3}{2}}y\right)^{5}\left(y^{-1}\right)^{0}+\binom{5}{1}\left(x^{\frac{3}{2}}y\right)^{4}\left(y^{-1}\right)^{1}+$$

$$+\binom{5}{2}\left(x^{\frac{3}{2}}y\right)^{3}\left(y^{-1}\right)^{2}+\binom{5}{3}\left(x^{\frac{3}{2}}y\right)^{2}\left(y^{-1}\right)^{3}+\binom{5}{4}\left(x^{\frac{3}{2}}y\right)^{1}\left(y^{-1}\right)^{4}+$$

$$+\binom{5}{5}\left(x^{\frac{3}{2}}y\right)^{0}\left(y^{-1}\right)^{5}=1\cdot x^{\frac{15}{2}}y^{5}\cdot 1+$$

Zadatak 4

$$\left(x^{m}\right)^{n} = x^{mn}$$

$$(xy)^{n} = x^{n}y^{n}$$

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y + y^{-1}\right)^{5}$.

Rješenje

$$\Big(\underbrace{\boxed{x^{\frac{3}{2}}y}}_{a}+\underbrace{\boxed{y^{-1}}}_{b}\Big)^{5} = \binom{5}{0}\left(x^{\frac{3}{2}}y\right)^{5}\left(y^{-1}\right)^{0} + \binom{5}{1}\left(x^{\frac{3}{2}}y\right)^{4}\left(y^{-1}\right)^{1} +$$

$$+\binom{5}{2}\left(x^{\frac{3}{2}}y\right)^{3}\left(y^{-1}\right)^{2} + \binom{5}{3}\left(x^{\frac{3}{2}}y\right)^{2}\left(y^{-1}\right)^{3} + \binom{5}{4}\left(x^{\frac{3}{2}}y\right)^{1}\left(y^{-1}\right)^{4} +$$

$$+\binom{5}{5}\left(x^{\frac{3}{2}}y\right)^{0}\left(y^{-1}\right)^{5} = 1\cdot x^{\frac{15}{2}}y^{5}\cdot 1 + 5$$

Zadatak 4

$$\boxed{\left(x^m\right)^n = x^{mn}} \qquad \boxed{(xy)^n = x^n y^n}$$

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y + y^{-1}\right)^5$.

Rješenje

$$\Big(\underbrace{\boxed{x^{\frac{3}{2}}y}}^{a}+\underbrace{\boxed{y^{-1}}}^{b}\Big)^5 = \binom{5}{0}\left(x^{\frac{3}{2}}y\right)^5\left(y^{-1}\right)^0 + \binom{5}{1}\left(x^{\frac{3}{2}}y\right)^4\left(y^{-1}\right)^1 +$$

$$+ \binom{5}{2}\left(x^{\frac{3}{2}}y\right)^3\left(y^{-1}\right)^2 + \binom{5}{3}\left(x^{\frac{3}{2}}y\right)^2\left(y^{-1}\right)^3 + \binom{5}{4}\left(x^{\frac{3}{2}}y\right)^1\left(y^{-1}\right)^4 +$$

$$+ \binom{5}{5}\left(x^{\frac{3}{2}}y\right)^0\left(y^{-1}\right)^5 = 1 \cdot x^{\frac{15}{2}}y^5 \cdot 1 + 5 \cdot x^6 y^4$$

Zadatak 4

$$\boxed{\left(x^m\right)^n = x^{mn}} \qquad \boxed{(xy)^n = x^n y^n}$$

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y + y^{-1}\right)^5$.

Rješenje

$$\Big(\overset{a}{\boxed{x^{\frac{3}{2}}y}} + \overset{b}{\boxed{y^{-1}}}\Big)^5 = \binom{5}{0}\left(x^{\frac{3}{2}}y\right)^5\left(y^{-1}\right)^0 + \binom{5}{1}\left(x^{\frac{3}{2}}y\right)^4\left(y^{-1}\right)^1 +$$

$$+ \binom{5}{2}\left(x^{\frac{3}{2}}y\right)^3\left(y^{-1}\right)^2 + \binom{5}{3}\left(x^{\frac{3}{2}}y\right)^2\left(y^{-1}\right)^3 + \binom{5}{4}\left(x^{\frac{3}{2}}y\right)^1\left(y^{-1}\right)^4 +$$

$$+ \binom{5}{5}\left(x^{\frac{3}{2}}y\right)^0\left(y^{-1}\right)^5 = 1 \cdot x^{\frac{15}{2}}y^5 \cdot 1 + 5 \cdot x^6 y^4 \cdot y^{-1}$$

Zadatak 4

$$\left(x^m\right)^n = x^{mn}$$

$$(xy)^n = x^n y^n$$

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y + y^{-1}\right)^5$.

Rješenje

$$\Big(\overset{a}{\boxed{x^{\frac{3}{2}}y}} + \overset{b}{\boxed{y^{-1}}}\Big)^5 = \binom{5}{0}\left(x^{\frac{3}{2}}y\right)^5\left(y^{-1}\right)^0 + \binom{5}{1}\left(x^{\frac{3}{2}}y\right)^4\left(y^{-1}\right)^1 +$$

$$+ \binom{5}{2}\left(x^{\frac{3}{2}}y\right)^3\left(y^{-1}\right)^2 + \binom{5}{3}\left(x^{\frac{3}{2}}y\right)^2\left(y^{-1}\right)^3 + \binom{5}{4}\left(x^{\frac{3}{2}}y\right)^1\left(y^{-1}\right)^4 +$$

$$+ \binom{5}{5}\left(x^{\frac{3}{2}}y\right)^0\left(y^{-1}\right)^5 = 1 \cdot x^{\frac{15}{2}}y^5 \cdot 1 + 5 \cdot x^6y^4 \cdot y^{-1} +$$

Zadatak 4

$$\boxed{\left(x^m\right)^n = x^{mn}} \qquad \boxed{(xy)^n = x^n y^n}$$

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y + y^{-1}\right)^5$.

Rješenje

$$\Big(\overset{a}{\boxed{x^{\frac{3}{2}}y}} + \overset{b}{\boxed{y^{-1}}}\Big)^5 = \binom{5}{0}\left(x^{\frac{3}{2}}y\right)^5\left(y^{-1}\right)^0 + \binom{5}{1}\left(x^{\frac{3}{2}}y\right)^4\left(y^{-1}\right)^1 +$$

$$+ \binom{5}{2}\left(x^{\frac{3}{2}}y\right)^3\left(y^{-1}\right)^2 + \binom{5}{3}\left(x^{\frac{3}{2}}y\right)^2\left(y^{-1}\right)^3 + \binom{5}{4}\left(x^{\frac{3}{2}}y\right)^1\left(y^{-1}\right)^4 +$$

$$+ \binom{5}{5}\left(x^{\frac{3}{2}}y\right)^0\left(y^{-1}\right)^5 = 1 \cdot x^{\frac{15}{2}}y^5 \cdot 1 + 5 \cdot x^6y^4 \cdot y^{-1} + 10$$

Zadatak 4

$$\boxed{\left(x^m\right)^n = x^{mn}} \qquad \boxed{(xy)^n = x^n y^n}$$

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y + y^{-1}\right)^5$.

Rješenje

$$\Big(\overset{a}{\boxed{x^{\frac{3}{2}}y}}+\overset{b}{\boxed{y^{-1}}}\Big)^5 = \binom{5}{0}\left(x^{\frac{3}{2}}y\right)^5\left(y^{-1}\right)^0 + \binom{5}{1}\left(x^{\frac{3}{2}}y\right)^4\left(y^{-1}\right)^1 +$$

$$+ \binom{5}{2}\left(x^{\frac{3}{2}}y\right)^3\left(y^{-1}\right)^2 + \binom{5}{3}\left(x^{\frac{3}{2}}y\right)^2\left(y^{-1}\right)^3 + \binom{5}{4}\left(x^{\frac{3}{2}}y\right)^1\left(y^{-1}\right)^4 +$$

$$+ \binom{5}{5}\left(x^{\frac{3}{2}}y\right)^0\left(y^{-1}\right)^5 = 1 \cdot x^{\frac{15}{2}}y^5 \cdot 1 + 5 \cdot x^6y^4 \cdot y^{-1} + 10 \cdot x^{\frac{9}{2}}y^3$$

Zadatak 4

$$\left(x^m\right)^n = x^{mn}$$

$$(xy)^n = x^n y^n$$

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y + y^{-1}\right)^5$.

Rješenje

$$\Big(\overset{a}{\boxed{x^{\frac{3}{2}}y}}+\overset{b}{\boxed{y^{-1}}}\Big)^5 = \binom{5}{0}\left(x^{\frac{3}{2}}y\right)^5\left(y^{-1}\right)^0 + \binom{5}{1}\left(x^{\frac{3}{2}}y\right)^4\left(y^{-1}\right)^1 +$$

$$+\binom{5}{2}\left(x^{\frac{3}{2}}y\right)^3\left(y^{-1}\right)^2 + \binom{5}{3}\left(x^{\frac{3}{2}}y\right)^2\left(y^{-1}\right)^3 + \binom{5}{4}\left(x^{\frac{3}{2}}y\right)^1\left(y^{-1}\right)^4 +$$

$$+\binom{5}{5}\left(x^{\frac{3}{2}}y\right)^0\left(y^{-1}\right)^5 = 1\cdot x^{\frac{15}{2}}y^5\cdot 1 + 5\cdot x^6y^4\cdot y^{-1} + 10\cdot x^{\frac{9}{2}}y^3\cdot y^{-2}$$

Zadatak 4

$$\left(x^{m}\right)^{n} = x^{mn}$$

$$(xy)^{n} = x^{n}y^{n}$$

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y + y^{-1}\right)^{5}$.

Rješenje

$$\Big(\overbrace{\boxed{x^{\frac{3}{2}}y}}^{a}+\overbrace{\boxed{y^{-1}}}^{b}\Big)^{5} = \binom{5}{0}\left(x^{\frac{3}{2}}y\right)^{5}\left(y^{-1}\right)^{0} + \binom{5}{1}\left(x^{\frac{3}{2}}y\right)^{4}\left(y^{-1}\right)^{1} +$$

$$+ \binom{5}{2}\left(x^{\frac{3}{2}}y\right)^{3}\left(y^{-1}\right)^{2} + \binom{5}{3}\left(x^{\frac{3}{2}}y\right)^{2}\left(y^{-1}\right)^{3} + \binom{5}{4}\left(x^{\frac{3}{2}}y\right)^{1}\left(y^{-1}\right)^{4} +$$

$$+ \binom{5}{5}\left(x^{\frac{3}{2}}y\right)^{0}\left(y^{-1}\right)^{5} = 1 \cdot x^{\frac{15}{2}}y^{5} \cdot 1 + 5 \cdot x^{6}y^{4} \cdot y^{-1} + 10 \cdot x^{\frac{9}{2}}y^{3} \cdot y^{-2} +$$

$$+$$

Zadatak 4

$$\boxed{\left(x^{m}\right)^{n} = x^{mn}} \qquad \boxed{(xy)^{n} = x^{n}y^{n}}$$

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y + y^{-1}\right)^{5}$.

Rješenje

$$\Big(\overset{a}{\boxed{x^{\frac{3}{2}}y}} + \overset{b}{\boxed{y^{-1}}}\Big)^{5} = \binom{5}{0}\left(x^{\frac{3}{2}}y\right)^{5}\left(y^{-1}\right)^{0} + \binom{5}{1}\left(x^{\frac{3}{2}}y\right)^{4}\left(y^{-1}\right)^{1} +$$

$$+ \binom{5}{2}\left(x^{\frac{3}{2}}y\right)^{3}\left(y^{-1}\right)^{2} + \binom{5}{3}\left(x^{\frac{3}{2}}y\right)^{2}\left(y^{-1}\right)^{3} + \binom{5}{4}\left(x^{\frac{3}{2}}y\right)^{1}\left(y^{-1}\right)^{4} +$$

$$+ \binom{5}{5}\left(x^{\frac{3}{2}}y\right)^{0}\left(y^{-1}\right)^{5} = 1 \cdot x^{\frac{15}{2}}y^{5} \cdot 1 + 5 \cdot x^{6}y^{4} \cdot y^{-1} + 10 \cdot x^{\frac{9}{2}}y^{3} \cdot y^{-2} +$$

$$+ 10$$

Zadatak 4

$$\boxed{\left(x^m\right)^n = x^{mn}} \qquad \boxed{(xy)^n = x^n y^n}$$

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y + y^{-1}\right)^5$.

Rješenje

$$\Big(\overset{a}{\boxed{x^{\frac{3}{2}}y}} + \overset{b}{\boxed{y^{-1}}}\Big)^5 = \binom{5}{0}\left(x^{\frac{3}{2}}y\right)^5\left(y^{-1}\right)^0 + \binom{5}{1}\left(x^{\frac{3}{2}}y\right)^4\left(y^{-1}\right)^1 +$$

$$+\binom{5}{2}\left(x^{\frac{3}{2}}y\right)^3\left(y^{-1}\right)^2 + \binom{5}{3}\left(x^{\frac{3}{2}}y\right)^2\left(y^{-1}\right)^3 + \binom{5}{4}\left(x^{\frac{3}{2}}y\right)^1\left(y^{-1}\right)^4 +$$

$$+\binom{5}{5}\left(x^{\frac{3}{2}}y\right)^0\left(y^{-1}\right)^5 = 1\cdot x^{\frac{15}{2}}y^5\cdot 1 + 5\cdot x^6y^4\cdot y^{-1} + 10\cdot x^{\frac{9}{2}}y^3\cdot y^{-2} +$$

$$+\,10\cdot x^3y^2$$

Zadatak 4

$$\boxed{\left(x^m\right)^n = x^{mn}} \qquad \boxed{(xy)^n = x^n y^n}$$

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y + y^{-1}\right)^5$.

Rješenje

$$\Big(\overset{a}{\boxed{x^{\frac{3}{2}}y}}+\overset{b}{\boxed{y^{-1}}}\Big)^5 = \binom{5}{0}\left(x^{\frac{3}{2}}y\right)^5\left(y^{-1}\right)^0 + \binom{5}{1}\left(x^{\frac{3}{2}}y\right)^4\left(y^{-1}\right)^1 +$$

$$+\binom{5}{2}\left(x^{\frac{3}{2}}y\right)^3\left(y^{-1}\right)^2 + \binom{5}{3}\left(x^{\frac{3}{2}}y\right)^2\left(y^{-1}\right)^3 + \binom{5}{4}\left(x^{\frac{3}{2}}y\right)^1\left(y^{-1}\right)^4 +$$

$$+\binom{5}{5}\left(x^{\frac{3}{2}}y\right)^0\left(y^{-1}\right)^5 = 1\cdot x^{\frac{15}{2}}y^5\cdot 1 + 5\cdot x^6y^4\cdot y^{-1} + 10\cdot x^{\frac{9}{2}}y^3\cdot y^{-2} +$$

$$+ 10\cdot x^3y^2\cdot y^{-3}$$

Zadatak 4

$$\left(x^m\right)^n = x^{mn}$$

$$(xy)^n = x^n y^n$$

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y + y^{-1}\right)^5$.

Rješenje

$$\Big(\overset{a}{\boxed{x^{\frac{3}{2}}y}} + \overset{b}{\boxed{y^{-1}}}\Big)^5 = \binom{5}{0}\left(x^{\frac{3}{2}}y\right)^5\left(y^{-1}\right)^0 + \binom{5}{1}\left(x^{\frac{3}{2}}y\right)^4\left(y^{-1}\right)^1 +$$

$$+ \binom{5}{2}\left(x^{\frac{3}{2}}y\right)^3\left(y^{-1}\right)^2 + \binom{5}{3}\left(x^{\frac{3}{2}}y\right)^2\left(y^{-1}\right)^3 + \binom{5}{4}\left(x^{\frac{3}{2}}y\right)^1\left(y^{-1}\right)^4 +$$

$$+ \binom{5}{5}\left(x^{\frac{3}{2}}y\right)^0\left(y^{-1}\right)^5 = 1 \cdot x^{\frac{15}{2}}y^5 \cdot 1 + 5 \cdot x^6y^4 \cdot y^{-1} + 10 \cdot x^{\frac{9}{2}}y^3 \cdot y^{-2} +$$

$$+ 10 \cdot x^3y^2 \cdot y^{-3} +$$

Zadatak 4

$$\boxed{\left(x^m\right)^n = x^{mn}} \quad \boxed{(xy)^n = x^n y^n}$$

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y + y^{-1}\right)^5$.

Rješenje

$$\Big(\overset{a}{\boxed{x^{\frac{3}{2}}y}}+\overset{b}{\boxed{y^{-1}}}\Big)^5 = \binom{5}{0}\left(x^{\frac{3}{2}}y\right)^5\left(y^{-1}\right)^0 + \binom{5}{1}\left(x^{\frac{3}{2}}y\right)^4\left(y^{-1}\right)^1 +$$

$$+\binom{5}{2}\left(x^{\frac{3}{2}}y\right)^3\left(y^{-1}\right)^2 + \binom{5}{3}\left(x^{\frac{3}{2}}y\right)^2\left(y^{-1}\right)^3 + \binom{5}{4}\left(x^{\frac{3}{2}}y\right)^1\left(y^{-1}\right)^4 +$$

$$+\binom{5}{5}\left(x^{\frac{3}{2}}y\right)^0\left(y^{-1}\right)^5 = 1 \cdot x^{\frac{15}{2}}y^5 \cdot 1 + 5 \cdot x^6y^4 \cdot y^{-1} + 10 \cdot x^{\frac{9}{2}}y^3 \cdot y^{-2} +$$

$$+ 10 \cdot x^3y^2 \cdot y^{-3} + 5$$

Zadatak 4

$\boxed{\left(x^m\right)^n = x^{mn}}$ $\boxed{(xy)^n = x^n y^n}$

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y + y^{-1}\right)^5$.

Rješenje

$$\Big(\overset{a}{\boxed{x^{\frac{3}{2}}y}}+\overset{b}{\boxed{y^{-1}}}\Big)^5 = \binom{5}{0}\left(x^{\frac{3}{2}}y\right)^5\left(y^{-1}\right)^0 + \binom{5}{1}\left(x^{\frac{3}{2}}y\right)^4\left(y^{-1}\right)^1 +$$

$$+\binom{5}{2}\left(x^{\frac{3}{2}}y\right)^3\left(y^{-1}\right)^2 + \binom{5}{3}\left(x^{\frac{3}{2}}y\right)^2\left(y^{-1}\right)^3 + \binom{5}{4}\left(x^{\frac{3}{2}}y\right)^1\left(y^{-1}\right)^4 +$$

$$+\binom{5}{5}\left(x^{\frac{3}{2}}y\right)^0\left(y^{-1}\right)^5 = 1 \cdot x^{\frac{15}{2}}y^5 \cdot 1 + 5 \cdot x^6y^4 \cdot y^{-1} + 10 \cdot x^{\frac{9}{2}}y^3 \cdot y^{-2} +$$

$$+ 10 \cdot x^3y^2 \cdot y^{-3} + 5 \cdot x^{\frac{3}{2}}y$$

Zadatak 4

$$\boxed{\left(x^m\right)^n = x^{mn}} \qquad \boxed{(xy)^n = x^n y^n}$$

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y + y^{-1}\right)^5$.

Rješenje

$$\Big(\overset{a}{\boxed{x^{\frac{3}{2}}y}}+\overset{b}{\boxed{y^{-1}}}\Big)^5 = \binom{5}{0}\left(x^{\frac{3}{2}}y\right)^5\left(y^{-1}\right)^0 + \binom{5}{1}\left(x^{\frac{3}{2}}y\right)^4\left(y^{-1}\right)^1 +$$

$$+\binom{5}{2}\left(x^{\frac{3}{2}}y\right)^3\left(y^{-1}\right)^2 + \binom{5}{3}\left(x^{\frac{3}{2}}y\right)^2\left(y^{-1}\right)^3 + \binom{5}{4}\left(x^{\frac{3}{2}}y\right)^1\left(y^{-1}\right)^4 +$$

$$+\binom{5}{5}\left(x^{\frac{3}{2}}y\right)^0\left(y^{-1}\right)^5 = 1\cdot x^{\frac{15}{2}}y^5\cdot 1 + 5\cdot x^6y^4\cdot y^{-1} + 10\cdot x^{\frac{9}{2}}y^3\cdot y^{-2} +$$

$$+10\cdot x^3y^2\cdot y^{-3} + 5\cdot x^{\frac{3}{2}}y\cdot y^{-4}$$

Zadatak 4

$$\boxed{\left(x^m\right)^n = x^{mn}} \qquad \boxed{(xy)^n = x^n y^n}$$

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y + y^{-1}\right)^5$.

Rješenje

$$\Big(\overbrace{\boxed{x^{\frac{3}{2}}y}}^{a}+\overbrace{\boxed{y^{-1}}}^{b}\Big)^5 = \binom{5}{0}\left(x^{\frac{3}{2}}y\right)^5\left(y^{-1}\right)^0 + \binom{5}{1}\left(x^{\frac{3}{2}}y\right)^4\left(y^{-1}\right)^1 +$$

$$+\binom{5}{2}\left(x^{\frac{3}{2}}y\right)^3\left(y^{-1}\right)^2 + \binom{5}{3}\left(x^{\frac{3}{2}}y\right)^2\left(y^{-1}\right)^3 + \binom{5}{4}\left(x^{\frac{3}{2}}y\right)^1\left(y^{-1}\right)^4 +$$

$$+\binom{5}{5}\left(x^{\frac{3}{2}}y\right)^0\left(y^{-1}\right)^5 = 1\cdot x^{\frac{15}{2}}y^5\cdot 1 + 5\cdot x^6y^4\cdot y^{-1} + 10\cdot x^{\frac{9}{2}}y^3\cdot y^{-2} +$$

$$+ 10\cdot x^3y^2\cdot y^{-3} + 5\cdot x^{\frac{3}{2}}y\cdot y^{-4} +$$

Zadatak 4

$$\left(x^m\right)^n = x^{mn}$$

$$(xy)^n = x^n y^n$$

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y + y^{-1}\right)^5$.

Rješenje

$$\Big(\overset{a}{\boxed{x^{\frac{3}{2}}y}} + \overset{b}{\boxed{y^{-1}}}\Big)^5 = \binom{5}{0}\left(x^{\frac{3}{2}}y\right)^5\left(y^{-1}\right)^0 + \binom{5}{1}\left(x^{\frac{3}{2}}y\right)^4\left(y^{-1}\right)^1 +$$

$$+ \binom{5}{2}\left(x^{\frac{3}{2}}y\right)^3\left(y^{-1}\right)^2 + \binom{5}{3}\left(x^{\frac{3}{2}}y\right)^2\left(y^{-1}\right)^3 + \binom{5}{4}\left(x^{\frac{3}{2}}y\right)^1\left(y^{-1}\right)^4 +$$

$$+ \binom{5}{5}\left(x^{\frac{3}{2}}y\right)^0\left(y^{-1}\right)^5 = 1 \cdot x^{\frac{15}{2}}y^5 \cdot 1 + 5 \cdot x^6y^4 \cdot y^{-1} + 10 \cdot x^{\frac{9}{2}}y^3 \cdot y^{-2} +$$

$$+ 10 \cdot x^3y^2 \cdot y^{-3} + 5 \cdot x^{\frac{3}{2}}y \cdot y^{-4} + 1$$

Zadatak 4

$$\boxed{\left(x^m\right)^n = x^{mn}} \qquad \boxed{(xy)^n = x^n y^n}$$

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y + y^{-1}\right)^5$.

Rješenje

$$\Big(\overset{a}{\boxed{x^{\frac{3}{2}}y}}+\overset{b}{\boxed{y^{-1}}}\Big)^5 = \binom{5}{0}\left(x^{\frac{3}{2}}y\right)^5\left(y^{-1}\right)^0 + \binom{5}{1}\left(x^{\frac{3}{2}}y\right)^4\left(y^{-1}\right)^1 +$$

$$+ \binom{5}{2}\left(x^{\frac{3}{2}}y\right)^3\left(y^{-1}\right)^2 + \binom{5}{3}\left(x^{\frac{3}{2}}y\right)^2\left(y^{-1}\right)^3 + \binom{5}{4}\left(x^{\frac{3}{2}}y\right)^1\left(y^{-1}\right)^4 +$$

$$+ \binom{5}{5}\left(x^{\frac{3}{2}}y\right)^0\left(y^{-1}\right)^5 = 1 \cdot x^{\frac{15}{2}}y^5 \cdot 1 + 5 \cdot x^6y^4 \cdot y^{-1} + 10 \cdot x^{\frac{9}{2}}y^3 \cdot y^{-2} +$$

$$+ 10 \cdot x^3y^2 \cdot y^{-3} + 5 \cdot x^{\frac{3}{2}}y \cdot y^{-4} + 1 \cdot 1$$

Zadatak 4

$$\boxed{\left(x^m\right)^n = x^{mn}} \qquad \boxed{(xy)^n = x^n y^n}$$

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y + y^{-1}\right)^5$.

Rješenje

$$\Big(\underbrace{\boxed{x^{\frac{3}{2}}y}}_{a}+\underbrace{\boxed{y^{-1}}}_{b}\Big)^5 = \binom{5}{0}\left(x^{\frac{3}{2}}y\right)^5\left(y^{-1}\right)^0 + \binom{5}{1}\left(x^{\frac{3}{2}}y\right)^4\left(y^{-1}\right)^1 +$$

$$+\binom{5}{2}\left(x^{\frac{3}{2}}y\right)^3\left(y^{-1}\right)^2 + \binom{5}{3}\left(x^{\frac{3}{2}}y\right)^2\left(y^{-1}\right)^3 + \binom{5}{4}\left(x^{\frac{3}{2}}y\right)^1\left(y^{-1}\right)^4 +$$

$$+\binom{5}{5}\left(x^{\frac{3}{2}}y\right)^0\left(y^{-1}\right)^5 = 1\cdot x^{\frac{15}{2}}y^5\cdot 1 + 5\cdot x^6y^4\cdot y^{-1} + 10\cdot x^{\frac{9}{2}}y^3\cdot y^{-2} +$$

$$+10\cdot x^3y^2\cdot y^{-3} + 5\cdot x^{\frac{3}{2}}y\cdot y^{-4} + 1\cdot 1\cdot y^{-5}$$

Zadatak 4

$$\left(x^m\right)^n = x^{mn}$$

$$(xy)^n = x^n y^n$$

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y + y^{-1}\right)^5$.

Rješenje

$$\Big(\overset{a}{\boxed{x^{\frac{3}{2}}y}}+\overset{b}{\boxed{y^{-1}}}\Big)^5 = \binom{5}{0}\left(x^{\frac{3}{2}}y\right)^5\left(y^{-1}\right)^0 + \binom{5}{1}\left(x^{\frac{3}{2}}y\right)^4\left(y^{-1}\right)^1 +$$

$$+ \binom{5}{2}\left(x^{\frac{3}{2}}y\right)^3\left(y^{-1}\right)^2 + \binom{5}{3}\left(x^{\frac{3}{2}}y\right)^2\left(y^{-1}\right)^3 + \binom{5}{4}\left(x^{\frac{3}{2}}y\right)^1\left(y^{-1}\right)^4 +$$

$$+ \binom{5}{5}\left(x^{\frac{3}{2}}y\right)^0\left(y^{-1}\right)^5 = 1\cdot x^{\frac{15}{2}}y^5\cdot 1 + 5\cdot x^6y^4\cdot y^{-1} + 10\cdot x^{\frac{9}{2}}y^3\cdot y^{-2} +$$

$$+ 10\cdot x^3y^2\cdot y^{-3} + 5\cdot x^{\frac{3}{2}}y\cdot y^{-4} + 1\cdot 1\cdot y^{-5} =$$

$$=$$

Zadatak 4

$\left(x^{m}\right)^{n} = x^{mn}$ $(xy)^{n} = x^{n}y^{n}$

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y + y^{-1}\right)^{5}$.

Rješenje

$$\Big(\overset{a}{\boxed{x^{\frac{3}{2}}y}}+\overset{b}{\boxed{y^{-1}}}\Big)^{5} = \binom{5}{0}\left(x^{\frac{3}{2}}y\right)^{5}\left(y^{-1}\right)^{0} + \binom{5}{1}\left(x^{\frac{3}{2}}y\right)^{4}\left(y^{-1}\right)^{1} +$$

$$+ \binom{5}{2}\left(x^{\frac{3}{2}}y\right)^{3}\left(y^{-1}\right)^{2} + \binom{5}{3}\left(x^{\frac{3}{2}}y\right)^{2}\left(y^{-1}\right)^{3} + \binom{5}{4}\left(x^{\frac{3}{2}}y\right)^{1}\left(y^{-1}\right)^{4} +$$

$$+ \binom{5}{5}\left(x^{\frac{3}{2}}y\right)^{0}\left(y^{-1}\right)^{5} = 1 \cdot x^{\frac{15}{2}}y^{5} \cdot 1 + 5 \cdot x^{6}y^{4} \cdot y^{-1} + 10 \cdot x^{\frac{9}{2}}y^{3} \cdot y^{-2} +$$

$$+ 10 \cdot x^{3}y^{2} \cdot y^{-3} + 5 \cdot x^{\frac{3}{2}}y \cdot y^{-4} + 1 \cdot 1 \cdot y^{-5} =$$

$$= x^{\frac{15}{2}}y^{5}$$

Zadatak 4

$\boxed{x^m \cdot x^n = x^{m+n}}$ $\boxed{\left(x^m\right)^n = x^{mn}}$ $\boxed{(xy)^n = x^n y^n}$

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y + y^{-1}\right)^5$.

Rješenje

$$\Big(\overset{a}{\boxed{x^{\frac{3}{2}}y}}+\overset{b}{\boxed{y^{-1}}}\Big)^5 = \binom{5}{0}\left(x^{\frac{3}{2}}y\right)^5\left(y^{-1}\right)^0 + \binom{5}{1}\left(x^{\frac{3}{2}}y\right)^4\left(y^{-1}\right)^1 +$$

$$+\binom{5}{2}\left(x^{\frac{3}{2}}y\right)^3\left(y^{-1}\right)^2 + \binom{5}{3}\left(x^{\frac{3}{2}}y\right)^2\left(y^{-1}\right)^3 + \binom{5}{4}\left(x^{\frac{3}{2}}y\right)^1\left(y^{-1}\right)^4 +$$

$$+\binom{5}{5}\left(x^{\frac{3}{2}}y\right)^0\left(y^{-1}\right)^5 = 1\cdot x^{\frac{15}{2}}y^5\cdot 1 + 5\cdot x^6y^4\cdot y^{-1} + 10\cdot x^{\frac{9}{2}}y^3\cdot y^{-2} +$$

$$+10\cdot x^3y^2\cdot y^{-3} + 5\cdot x^{\frac{3}{2}}y\cdot y^{-4} + 1\cdot 1\cdot y^{-5} =$$

$$= x^{\frac{15}{2}}y^5 + 5x^6y^3$$

Zadatak 4 $\boxed{x^m \cdot x^n = x^{m+n}}$ $\boxed{\left(x^m\right)^n = x^{mn}}$ $\boxed{(xy)^n = x^n y^n}$

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y + y^{-1}\right)^5$.

Rješenje

$$\Big(\overset{a}{\boxed{x^{\frac{3}{2}}y}} + \overset{b}{\boxed{y^{-1}}}\Big)^5 = \binom{5}{0}\left(x^{\frac{3}{2}}y\right)^5\left(y^{-1}\right)^0 + \binom{5}{1}\left(x^{\frac{3}{2}}y\right)^4\left(y^{-1}\right)^1 +$$

$$+ \binom{5}{2}\left(x^{\frac{3}{2}}y\right)^3\left(y^{-1}\right)^2 + \binom{5}{3}\left(x^{\frac{3}{2}}y\right)^2\left(y^{-1}\right)^3 + \binom{5}{4}\left(x^{\frac{3}{2}}y\right)^1\left(y^{-1}\right)^4 +$$

$$+ \binom{5}{5}\left(x^{\frac{3}{2}}y\right)^0\left(y^{-1}\right)^5 = 1 \cdot x^{\frac{15}{2}}y^5 \cdot 1 + 5 \cdot x^6y^4 \cdot y^{-1} + 10 \cdot x^{\frac{9}{2}}y^3 \cdot y^{-2} +$$

$$+ 10 \cdot x^3y^2 \cdot y^{-3} + 5 \cdot x^{\frac{3}{2}}y \cdot y^{-4} + 1 \cdot 1 \cdot y^{-5} =$$

$$= x^{\frac{15}{2}}y^5 + 5x^6y^3 + 10x^{\frac{9}{2}}y$$

Zadatak 4

$\boxed{x^m \cdot x^n = x^{m+n}}$ $\boxed{\left(x^m\right)^n = x^{mn}}$ $\boxed{(xy)^n = x^n y^n}$

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y + y^{-1}\right)^5$.

Rješenje

$$\Big(\overset{a}{\boxed{x^{\frac{3}{2}}y}}+\overset{b}{\boxed{y^{-1}}}\Big)^5 = \binom{5}{0}\left(x^{\frac{3}{2}}y\right)^5\left(y^{-1}\right)^0 + \binom{5}{1}\left(x^{\frac{3}{2}}y\right)^4\left(y^{-1}\right)^1 +$$

$$+\binom{5}{2}\left(x^{\frac{3}{2}}y\right)^3\left(y^{-1}\right)^2 + \binom{5}{3}\left(x^{\frac{3}{2}}y\right)^2\left(y^{-1}\right)^3 + \binom{5}{4}\left(x^{\frac{3}{2}}y\right)^1\left(y^{-1}\right)^4 +$$

$$+\binom{5}{5}\left(x^{\frac{3}{2}}y\right)^0\left(y^{-1}\right)^5 = 1 \cdot x^{\frac{15}{2}}y^5 \cdot 1 + 5 \cdot x^6y^4 \cdot y^{-1} + 10 \cdot x^{\frac{9}{2}}y^3 \cdot y^{-2} +$$

$$+ 10 \cdot x^3y^2 \cdot y^{-3} + 5 \cdot x^{\frac{3}{2}}y \cdot y^{-4} + 1 \cdot 1 \cdot y^{-5} =$$

$$= x^{\frac{15}{2}}y^5 + 5x^6y^3 + 10x^{\frac{9}{2}}y + 10x^3y^{-1}$$

Zadatak 4

$\boxed{x^m \cdot x^n = x^{m+n}}$ $\boxed{\left(x^m\right)^n = x^{mn}}$ $\boxed{(xy)^n = x^n y^n}$

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y + y^{-1}\right)^5$.

Rješenje

$$\Big(\overset{a}{\boxed{x^{\frac{3}{2}}y}}+\overset{b}{\boxed{y^{-1}}}\Big)^5 = \binom{5}{0}\left(x^{\frac{3}{2}}y\right)^5\left(y^{-1}\right)^0 + \binom{5}{1}\left(x^{\frac{3}{2}}y\right)^4\left(y^{-1}\right)^1 +$$

$$+\binom{5}{2}\left(x^{\frac{3}{2}}y\right)^3\left(y^{-1}\right)^2 + \binom{5}{3}\left(x^{\frac{3}{2}}y\right)^2\left(y^{-1}\right)^3 + \binom{5}{4}\left(x^{\frac{3}{2}}y\right)^1\left(y^{-1}\right)^4 +$$

$$+\binom{5}{5}\left(x^{\frac{3}{2}}y\right)^0\left(y^{-1}\right)^5 = 1\cdot x^{\frac{15}{2}}y^5\cdot 1 + 5\cdot x^6y^4\cdot y^{-1} + 10\cdot x^{\frac{9}{2}}y^3\cdot y^{-2} +$$

$$+10\cdot x^3y^2\cdot y^{-3} + 5\cdot x^{\frac{3}{2}}y\cdot y^{-4} + 1\cdot 1\cdot y^{-5} =$$

$$= x^{\frac{15}{2}}y^5 + 5x^6y^3 + 10x^{\frac{9}{2}}y + 10x^3y^{-1} + 5x^{\frac{3}{2}}y^{-3}$$

Zadatak 4

$\boxed{x^m \cdot x^n = x^{m+n}}$ $\boxed{\left(x^m\right)^n = x^{mn}}$ $\boxed{(xy)^n = x^n y^n}$

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y + y^{-1}\right)^5$.

Rješenje

$$\Big(\overset{a}{\boxed{x^{\frac{3}{2}}y}}+\overset{b}{\boxed{y^{-1}}}\Big)^5 = \binom{5}{0}\left(x^{\frac{3}{2}}y\right)^5\left(y^{-1}\right)^0 + \binom{5}{1}\left(x^{\frac{3}{2}}y\right)^4\left(y^{-1}\right)^1 +$$

$$+ \binom{5}{2}\left(x^{\frac{3}{2}}y\right)^3\left(y^{-1}\right)^2 + \binom{5}{3}\left(x^{\frac{3}{2}}y\right)^2\left(y^{-1}\right)^3 + \binom{5}{4}\left(x^{\frac{3}{2}}y\right)^1\left(y^{-1}\right)^4 +$$

$$+ \binom{5}{5}\left(x^{\frac{3}{2}}y\right)^0\left(y^{-1}\right)^5 = 1 \cdot x^{\frac{15}{2}}y^5 \cdot 1 + 5 \cdot x^6y^4 \cdot y^{-1} + 10 \cdot x^{\frac{9}{2}}y^3 \cdot y^{-2} +$$

$$+ 10 \cdot x^3y^2 \cdot y^{-3} + 5 \cdot x^{\frac{3}{2}}y \cdot y^{-4} + 1 \cdot 1 \cdot y^{-5} =$$

$$= x^{\frac{15}{2}}y^5 + 5x^6y^3 + 10x^{\frac{9}{2}}y + 10x^3y^{-1} + 5x^{\frac{3}{2}}y^{-3} + y^{-5}$$

peti zadatak

Neka je $P(n)$ tvrdnja koja ovisi o $n \in \mathbb{N}$.

Matematička indukcija

Neka je $P(n)$ tvrdnja koja ovisi o $n \in \mathbb{N}$.

- $P(1)$ je istinita tvrdnja.

Matematička indukcija

Neka je $P(n)$ tvrdnja koja ovisi o $n \in \mathbb{N}$.

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Matematička indukcija

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$$P(1)$$

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Zaključak

Matematička indukcija

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Zaključak

$P(n)$ je tvrdnja koja vrijedi za sve prirodne brojeve.

Zadatak 5

Dokažite matematičkom indukcijom da za svaki $n \in \mathbb{N}$ *vrijedi*

$$4 + 20 + 48 + \cdots + 2n(3n-1) = 2n^2(n+1).$$

Zadatak 5

Dokažite matematičkom indukcijom da za svaki $n \in \mathbb{N}$ *vrijedi*

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Rješenje

- Baza indukcije: $n = 1$

Zadatak 5

Dokažite matematičkom indukcijom da za svaki $n \in \mathbb{N}$ *vrijedi*

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$$4 =$$

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Dokažite matematičkom indukcijom da za svaki $n \in \mathbb{N}$ vrijedi

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Rješenje

- Baza indukcije: $n = 1$

$$4 = 2 \cdot 1^2 \cdot (1 + 1)$$

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Rješenje

- Baza indukcije: $n = 1$

$$4 = 2 \cdot 1^2 \cdot (1+1)$$
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  Pretpostavimo da tvrdnja vrijedi za neki $n \in \mathbb{N}$,

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Dokažite matematičkom indukcijom da za svaki $n \in \mathbb{N}$ vrijedi

$$4 + 20 + 48 + \cdots + 2n(3n-1) = 2n^2(n+1).$$

Rješenje

- Baza indukcije: $n = 1$

$$4 = 2 \cdot 1^2 \cdot (1+1)$$
$$4 = 4$$

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  Pretpostavimo da tvrdnja vrijedi za neki $n \in \mathbb{N}$, tj. da vrijedi

$$4 + 20 + 48 + \cdots + 2n(3n-1) = 2n^2(n+1).$$

$$\boxed{4 + 20 + 48 + \cdots + 2n(3n-1) = 2n^2(n+1)}$$

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$$4+20+48+\cdots+2n(3n-1)+2$$

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$$4 + 20 + 48 + \cdots + 2n(3n-1) + 2(n+1)\big(3(n+1)$$

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$$4 + 20 + 48 + \cdots + 2n(3n-1) + 2(n+1)\big(3(n+1) - 1$$

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2

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$2(n+1)^2$

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$$= 2(n+1) \cdot$$

$$\boxed{ax^2 + bx + c = a(x-x_1)(x-x_2)}$$

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$$\underbrace{4+20+48+\cdots+2n(3n-1)}_{\text{pretpostavka indukcije}}+2(n+1)\big(3(n+1)-1\big)=$$

$$=2n^2(n+1)+2(n+1)(3n+2)=$$

$$=2(n+1)\big(n^2+(3n+2)\big)=2(n+1)(n^2+3n+2)=$$

$$=2(n+1)\cdot(n+1)(n+2)=2(n+1)^2(n+2)$$

$$\boxed{ax^2+bx+c=a(x-x_1)(x-x_2)}$$