Sigma zapis, binomni teorem i matematička indukcija

Matematika za ekonomiste 1

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Sadržaj

 Σ notacija

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Binomni teorem

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 a_1

$$a_1 + a_2$$

$$a_1 + a_2 + a_3$$

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

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

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

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

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

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

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

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

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

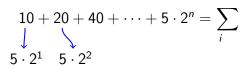
d)
$$-4 - 8 - 12 - \cdots - 4k$$

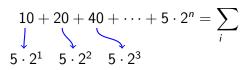
$$10 + 20 + 40 + \cdots + 5 \cdot 2^n =$$

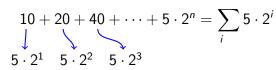
$$10 + 20 + 40 + \dots + 5 \cdot 2^n = \sum$$

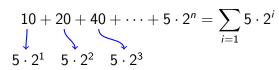
$$10 + 20 + 40 + \dots + 5 \cdot 2^n = \sum_{i}$$

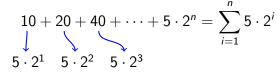
$$\begin{array}{c}
 10 + 20 + 40 + \dots + 5 \cdot 2^{n} = \sum_{i} \\
 5 \cdot 2^{1}
 \end{array}$$











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

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

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

a)
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b)
$$1^2 \cdot 2 + 2^2 \cdot 3 + 3^2 \cdot 4 + \dots + n^2 \cdot (n+1) = \sum$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$3^2 \cdot 4 + 4^2 \cdot 5 + 5^2 \cdot 6 + \dots + (n-2)^2 \cdot (n-1) = \sum_{k=0}^{n} (k-2)^2 (k-1)$$

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

d)

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

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

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

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

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

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

$$=\sum$$

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

$$= \sum_{i}$$

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

$$=\sum_{i}\left(-4j\right)$$

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

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

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

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

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)
$$\sum_{k=2}^{\infty} a_k$$

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

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

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

$$\alpha = 3$$

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

$$\alpha = 3$$

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

 $\alpha = 3$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

a)
$$\sum_{\alpha=3}^{8} \alpha^2 = 3^2 + 4^2 + 5^2 = 50$$

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

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

 $i = 1$ $i = 2$

a)
$$\sum_{\alpha=3}^{8} \alpha^2 = 3^2 + 4^2 + 5^2 = 50$$

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

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

a)
$$\sum_{\alpha=3}^{8} \alpha^2 = 3^2 + 4^2 + 5^2 = 50$$

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

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

$$i = 1 \qquad i = 2$$

a)
$$\sum_{\alpha=3}^{8} \alpha^2 = 3^2 + 4^2 + 5^2 = 50$$

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

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

a)
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 $\alpha = 3$ $\alpha = 4$ $\alpha = 5$

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

a)
$$\sum_{\alpha=3}^{8} \alpha^2 = 3^2 + 4^2 + 5^2 = 50$$

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

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

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

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

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

$$i = 1 \quad i = 2 \quad i = 3$$

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

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

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

$$i = 1 \quad i = 2 \quad i = 3 \quad i = n$$

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

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

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

$$i = 1 \quad i = 2 \quad i = 3 \quad i = n$$

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

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

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

 $k=5$

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

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

 $k = 5$

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

 $k = 5$ $k = 6$

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

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

 $k = 5$ $k = 6$

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

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

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

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

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

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

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

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

 $k = 5$ $k = 6$ $k = 7$ $k = n+2$
 $k = 9 + 11 + 13 + \dots + (2n+3)$

c)
$$\sum_{k=5}^{n+2} (2k-1) = 9 + 11 + 13 + \dots + (2(n+2)-1) = 0$$

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

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

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

c)
$$\sum_{k=5}^{n+2} (2k-1) = 9 + 11 + 13 + \dots + (2(n+2)-1) = 0$$

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

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

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

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

c)
$$\sum_{k=5}^{n+2} (2k-1) = 9 + 11 + 13 + \dots + (2(n+2)-1) = 0$$

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

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

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

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

c)
$$\sum_{k=5}^{n+2} (2k-1) = 9 + 11 + 13 + \dots + (2(n+2)-1) = 0$$

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

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

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

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

$$k = 5$$

c)
$$\sum_{k=5}^{n+2} (2k-1) = 9 + 11 + 13 + \dots + (2(n+2)-1) = 0$$

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

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

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

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

$$k = 5$$

c)
$$\sum_{k=5}^{n+2} (2k-1) = 9 + 11 + 13 + \dots + (2(n+2)-1) = 0$$

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

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

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

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

c)
$$\sum_{k=5}^{n+2} (2k-1) = 9 + 11 + 13 + \dots + (2(n+2)-1) = 0$$

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

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

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

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

$$k = 5 \quad k = 6$$

c)
$$\sum_{k=5}^{n+2} (2k-1) = 9 + 11 + 13 + \dots + (2(n+2)-1) = 0$$

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

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

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

c)
$$\sum_{k=5}^{n+2} (2k-1) = 9 + 11 + 13 + \dots + (2(n+2)-1) = 0$$

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

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

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

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

$$k = 5 \quad k = 6$$

c)
$$\sum_{k=5}^{n+2} (2k-1) = 9 + 11 + 13 + \dots + (2(n+2)-1) = 0$$

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

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

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

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

$$k = 5 \quad k = 6 \quad k = 7$$

c)
$$\sum_{k=5}^{n+2} (2k-1) = 9 + 11 + 13 + \dots + (2(n+2)-1) = 0$$

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

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

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c)
$$\sum_{k=5}^{n+2} (2k-1) = 9 + 11 + 13 + \dots + (2(n+2)-1) = 0$$

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

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

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

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

c)
$$\sum_{k=5}^{n+2} (2k-1) = 9 + 11 + 13 + \dots + (2(n+2)-1) = 0$$

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

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

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

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

$$k = 5 \quad k = 6 \quad k = 7$$

c)
$$\sum_{k=5}^{n+2} (2k-1) = 9 + 11 + 13 + \dots + (2(n+2)-1) = 0$$

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

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

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

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

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

c)
$$\sum_{k=5}^{n+2} (2k-1) = 9 + 11 + 13 + \dots + (2(n+2)-1) = 0$$

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

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

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

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

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

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

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

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

$$j = 2$$

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

$$j = 2$$

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

$$j = 2$$

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

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

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

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

 $j = 2$ $j = 3$ $j = 4$

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

d)
$$\sum_{j=2} a_k = a_k + a_k + a_k + \cdots + j = 2$$
 $j = 3$ $j = 4$

d)
$$\sum_{j=2} a_k = a_k + a_k + a_k + \cdots + a_k$$

 $j = 2$ $j = 3$ $j = 4$

d)
$$\sum_{j=2} a_k = a_k + a_k + a_k + \cdots + a_k$$

 $j = 2$ $j = 3$ $j = 4$ $j = n - 1$

d)
$$\sum_{j=2} a_k = a_k + a_k + a_k + \dots + a_k = j$$

 $j=2$ $j=3$ $j=4$ $j=n-1$

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

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

Binomni teorem

n! =

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

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

5! =

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

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

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

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

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

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

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

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

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

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

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

• Po dogovoru je 0! = 1.

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

$$n \text{ povrh } k$$

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

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

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

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

$$n$$
 povrh k

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

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

$$n$$
 povrh k

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

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

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

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

n povrh k

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

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

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

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

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

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

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

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

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

n povrh k

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

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

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

n povrh *k*

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

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

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

n povrh *k*

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

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

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

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

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

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

n povrh k

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

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

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

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

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

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

n povrh *k*

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

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

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

n povrh *k*

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

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

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

n povrh k

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

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

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

n povrh *k*

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

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

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

n povrh *k*

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

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

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

n povrh *k*

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

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

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

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

n povrh *k*

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

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

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

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

n povrh *k*

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

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

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

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

n povrh *k*

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

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

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

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

n povrh *k*

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

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

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

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

n povrh k

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

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

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

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

n povrh *k*

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

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

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

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

n povrh k

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

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

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

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

n povrh *k*

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

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

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

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

n povrh k

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$n!$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$\binom{1}{1}$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$n!$$

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

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

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

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

$$n!$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$n!$$

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

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

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

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

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

$$n!$$

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

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

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

$$\binom{1}{1}$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$\binom{n}{k} = \frac{n \cdot (n-1) \cdots (n-k+1)}{1 \cdot 2 \cdots k}$$
$$\binom{n}{0} = \frac{n!}{0! \cdot (n-0)!} = \frac{n!}{1 \cdot n!} = 1$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$\frac{1}{1} = r$$

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

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

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

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

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

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

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

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

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

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

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

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

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

 $\binom{n}{n} =$

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

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

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

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

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

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

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

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

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

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

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

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

$$\binom{n}{n} = \frac{n!}{n! \cdot (n-n)!} = \frac{n!}{n! \cdot 0!} = 1$$
$$\binom{n}{n} = \frac{1}{1 \cdot 2 \cdots (n-1) \cdot n}$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$\begin{pmatrix} 100 \\ 97 \end{pmatrix} = \begin{pmatrix} 100 \\ 100 - 97 \end{pmatrix}$$

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

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

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

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

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

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

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

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

$$\binom{100}{97} = \binom{100}{100 - 97} = \binom{100}{3} = \frac{}{1 \cdot 2 \cdot 3}$$

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

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

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

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

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

$$\binom{100}{97} = \binom{100}{100 - 97} = \binom{100}{3} = \frac{100 \cdot 99 \cdot 98}{1 \cdot 2 \cdot 3} = 161700$$

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

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

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

1 (1

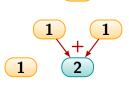
$$\binom{n}{k} + \binom{n}{k+1} = \binom{n+1}{k+1}$$

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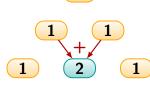
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1

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



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

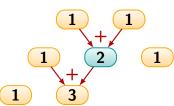


$$\binom{n}{k} + \binom{n}{k+1} = \binom{n+1}{k+1}$$

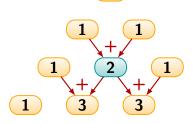
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$$\binom{n}{k} + \binom{n}{k+1} = \binom{n+1}{k+1}$$

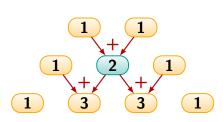




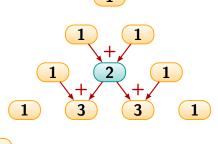
$$\binom{n}{k} + \binom{n}{k+1} = \binom{n+1}{k+1}$$



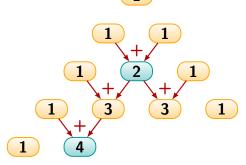
$$\binom{n}{k} + \binom{n}{k+1} = \binom{n+1}{k+1}$$



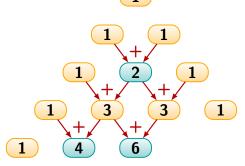
$$\binom{n}{k} + \binom{n}{k+1} = \binom{n+1}{k+1}$$



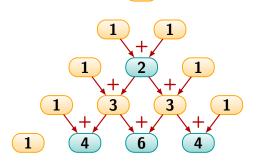
$$\binom{n}{k} + \binom{n}{k+1} = \binom{n+1}{k+1}$$



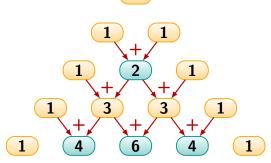
$$\binom{n}{k} + \binom{n}{k+1} = \binom{n+1}{k+1}$$



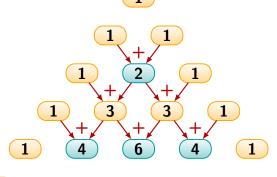
$$\binom{n}{k} + \binom{n}{k+1} = \binom{n+1}{k+1}$$



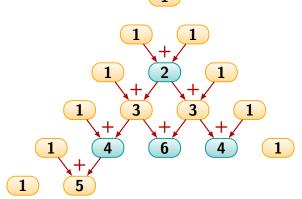
$$\binom{n}{k} + \binom{n}{k+1} = \binom{n+1}{k+1}$$



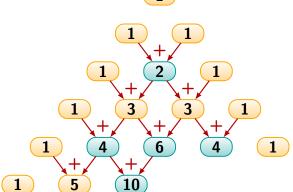
$$\binom{n}{k} + \binom{n}{k+1} = \binom{n+1}{k+1}$$



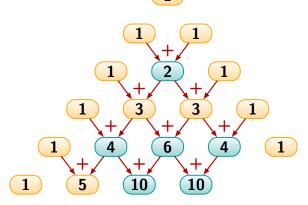
$$\binom{n}{k} + \binom{n}{k+1} = \binom{n+1}{k+1}$$



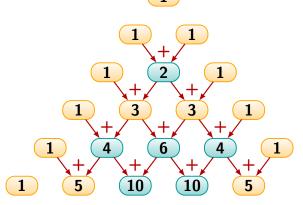
$$\binom{n}{k} + \binom{n}{k+1} = \binom{n+1}{k+1}$$



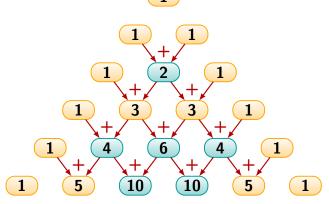
$$\binom{n}{k} + \binom{n}{k+1} = \binom{n+1}{k+1}$$



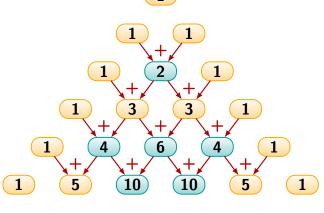
$$\binom{n}{k} + \binom{n}{k+1} = \binom{n+1}{k+1}$$



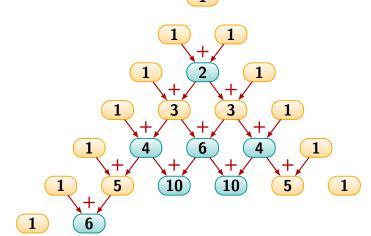
$$\binom{n}{k} + \binom{n}{k+1} = \binom{n+1}{k+1}$$



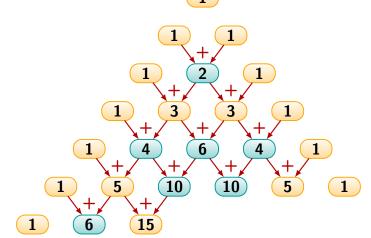
$$\binom{n}{k} + \binom{n}{k+1} = \binom{n+1}{k+1}$$



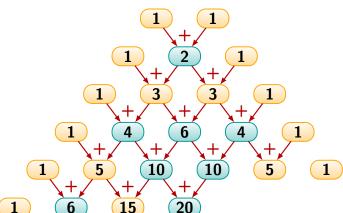
$$\binom{n}{k} + \binom{n}{k+1} = \binom{n+1}{k+1}$$



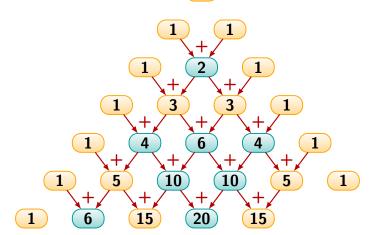
$$\binom{n}{k} + \binom{n}{k+1} = \binom{n+1}{k+1}$$



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

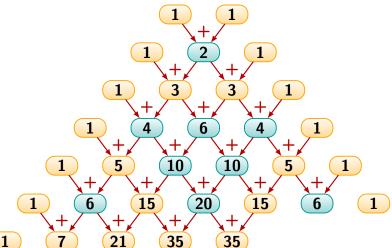


$$\binom{n}{k} + \binom{n}{k+1} = \binom{n+1}{k+1}$$

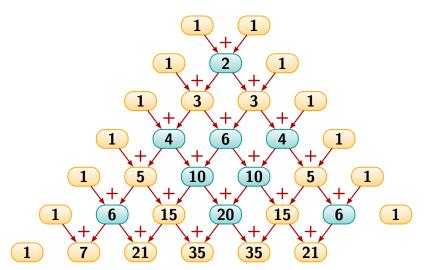


$$\binom{n}{k} + \binom{n}{k+1} = \binom{n+1}{k+1}$$

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



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



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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$k = 0$$

$$k = 1$$

$$k = 2$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$(a+b)^2 = \sum_{k=1}^{2} {2 \choose k} a^{2-k} b^k$$

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

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

$$(a+b)^2 = \sum_{k=1}^{2} {2 \choose k} a^{2-k} b^k =$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$k = 0$$

$$k = 1$$

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

 $=a^2$

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

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

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

$$=a^2+2ab$$

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

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

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

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

treći zadatak

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

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

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

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

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

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

$$(\sqrt[3]{x}+\sqrt[b]{4}=$$

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

$$(\sqrt[3]{x} + \sqrt[2]{4})^4 = \begin{pmatrix} 4\\0 \end{pmatrix}$$

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

$$(\sqrt[3]{x}) + (x^2))^4 = \begin{pmatrix} 4 \\ 0 \end{pmatrix} \sqrt[3]{x}^4$$

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

$$(\sqrt[3]{x} + \sqrt[2]{x^2})^4 = {4 \choose 0} \sqrt[3]{x^4} (x^2)^0$$

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

$$(\sqrt[3]{x} + \sqrt[b]{x^2})^4 = {4 \choose 0} \sqrt[3]{x^4} (x^2)^0 +$$

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

$$(\sqrt[3]{x} + (x^2))^4 = {4 \choose 0} \sqrt[3]{x}^4 (x^2)^0 + {4 \choose 1}$$

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

$$(\sqrt[3]{x} + (x^2))^4 = {4 \choose 0} \sqrt[3]{x}^4 (x^2)^0 + {4 \choose 1} \sqrt[3]{x}^3$$

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

$$(\sqrt[3]{x} + \sqrt[b]{x^2})^4 = {4 \choose 0} \sqrt[3]{x^4} (x^2)^0 + {4 \choose 1} \sqrt[3]{x^3} (x^2)^1$$

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

Rješenje

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

+

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

$$\underbrace{\begin{pmatrix} \frac{a}{\sqrt[3]{x}} + x^2 \end{pmatrix}^4}_{b} = \begin{pmatrix} 4 \\ 0 \end{pmatrix} \sqrt[3]{x}^4 (x^2)^0 + \begin{pmatrix} 4 \\ 1 \end{pmatrix} \sqrt[3]{x}^3 (x^2)^1 + \begin{pmatrix} 4 \\ 2 \end{pmatrix}$$

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

$$(\sqrt[3]{x} + \sqrt[2]{x^2})^4 = {4 \choose 0} \sqrt[3]{x^4} (x^2)^0 + {4 \choose 1} \sqrt[3]{x^3} (x^2)^1 + {4 \choose 2} \sqrt[3]{x^2}$$

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

$$(\sqrt[3]{x} + (x^2))^4 = {4 \choose 0} \sqrt[3]{x}^4 (x^2)^0 + {4 \choose 1} \sqrt[3]{x}^3 (x^2)^1 +$$

$$+ {4 \choose 2} \sqrt[3]{x}^2 (x^2)^2$$

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

$$(\sqrt[3]{x}) + (\sqrt[3]{x})^4 = {4 \choose 0} \sqrt[3]{x}^4 (x^2)^0 + {4 \choose 1} \sqrt[3]{x}^3 (x^2)^1 +$$

$$+ {4 \choose 2} \sqrt[3]{x}^2 (x^2)^2 +$$

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

$$(\sqrt[3]{x}) + (\sqrt[2]{x^2})^4 = {4 \choose 0} \sqrt[3]{x^4} (x^2)^0 + {4 \choose 1} \sqrt[3]{x^3} (x^2)^1 +$$

$$+ {4 \choose 2} \sqrt[3]{x^2} (x^2)^2 + {4 \choose 3}$$

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

$$(\sqrt[3]{x} + \sqrt[2]{x^2})^4 = {4 \choose 0} \sqrt[3]{x^4} (x^2)^0 + {4 \choose 1} \sqrt[3]{x^3} (x^2)^1 +$$

$$+ {4 \choose 2} \sqrt[3]{x^2} (x^2)^2 + {4 \choose 3} \sqrt[3]{x^1}$$

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

$$(\sqrt[3]{x} + \sqrt[k]{2})^4 = {4 \choose 0} \sqrt[3]{x}^4 (x^2)^0 + {4 \choose 1} \sqrt[3]{x}^3 (x^2)^1 +$$

$$+ {4 \choose 2} \sqrt[3]{x}^2 (x^2)^2 + {4 \choose 3} \sqrt[3]{x}^1 (x^2)^3$$

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

$$(\sqrt[3]{x} + \sqrt[k]{2})^4 = {4 \choose 0} \sqrt[3]{x}^4 (x^2)^0 + {4 \choose 1} \sqrt[3]{x}^3 (x^2)^1 +$$

$$+ {4 \choose 2} \sqrt[3]{x}^2 (x^2)^2 + {4 \choose 3} \sqrt[3]{x}^1 (x^2)^3 +$$

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

$$(\sqrt[3]{x} + (x^2))^4 = {4 \choose 0} \sqrt[3]{x}^4 (x^2)^0 + {4 \choose 1} \sqrt[3]{x}^3 (x^2)^1 +$$

$$+ {4 \choose 2} \sqrt[3]{x}^2 (x^2)^2 + {4 \choose 3} \sqrt[3]{x}^1 (x^2)^3 + {4 \choose 4}$$

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

$$((\sqrt[3]{x}) + (\sqrt[2]{x^2})^4 = {4 \choose 0} \sqrt[3]{x^4} (x^2)^0 + {4 \choose 1} \sqrt[3]{x^3} (x^2)^1 +$$

$$+ {4 \choose 2} \sqrt[3]{x^2} (x^2)^2 + {4 \choose 3} \sqrt[3]{x^1} (x^2)^3 + {4 \choose 4} \sqrt[3]{x^0}$$

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

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

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

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

Rješenje

=1

$$(\sqrt[3]{x} + \sqrt[2]{x^2})^4 = {4 \choose 0} \sqrt[3]{x^4} (x^2)^0 + {4 \choose 1} \sqrt[3]{x^3} (x^2)^1 +$$

$$+ {4 \choose 2} \sqrt[3]{x^2} (x^2)^2 + {4 \choose 3} \sqrt[3]{x^1} (x^2)^3 + {4 \choose 4} \sqrt[3]{x^0} (x^2)^4 =$$
1

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

$$((\sqrt[3]{x}) + (\sqrt[2]{x^2})^4 = (4)\sqrt[3]{x^4}(x^2)^0 + (4)\sqrt[3]{x^3}(x^2)^1 + (4)\sqrt[3]{x^2}(x^2)^2 + (4)\sqrt[3]{x^4}(x^2)^3 + (4)\sqrt[3]{x^0}(x^2)^4 = 1 \cdot x^{\frac{4}{3}}$$



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

$$((\sqrt[3]{x}) + (\sqrt[2]{x^2})^4 = {4 \choose 0} \sqrt[3]{x^4} (x^2)^0 + {4 \choose 1} \sqrt[3]{x^3} (x^2)^1 +$$

$$+ {4 \choose 2} \sqrt[3]{x^2} (x^2)^2 + {4 \choose 3} \sqrt[3]{x^1} (x^2)^3 + {4 \choose 4} \sqrt[3]{x^0} (x^2)^4 =$$

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

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

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

$$\begin{pmatrix} \frac{a}{\sqrt[3]{x}} + \frac{b}{(x^2)} \end{pmatrix}^4 = \begin{pmatrix} 4 \\ 0 \end{pmatrix} \sqrt[3]{x}^4 (x^2)^0 + \begin{pmatrix} 4 \\ 1 \end{pmatrix} \sqrt[3]{x}^3 (x^2)^1 + \\
+ \begin{pmatrix} 4 \\ 2 \end{pmatrix} \sqrt[3]{x}^2 (x^2)^2 + \begin{pmatrix} 4 \\ 3 \end{pmatrix} \sqrt[3]{x}^1 (x^2)^3 + \begin{pmatrix} 4 \\ 4 \end{pmatrix} \sqrt[3]{x}^0 (x^2)^4 = \\
= 1 \cdot x^{\frac{4}{3}} \cdot 1 +$$

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

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

$$\begin{pmatrix} \frac{a}{\sqrt[3]{x}} + \frac{b}{\sqrt[3]{x}} \\ + \frac{b}{\sqrt[3]{x}} + \frac{b}{\sqrt[3]{x}} \\ + \frac{4}{\sqrt[3]{x}} + \frac{b}{\sqrt[3]{x}} \\ + \frac{b}{\sqrt[3]{x}} + \frac{b}{\sqrt[3]{x}} + \frac{b}{\sqrt[3]{x}} \\ + \frac{b}{\sqrt[3]{x}} + \frac{b}{\sqrt[3]{x}} + \frac{b}{\sqrt[3]{x}} \\ + \frac{b}{\sqrt[3]{x}} + \frac{b}{\sqrt[3]{x}} + \frac{b}{\sqrt[3]{x}} + \frac{b}{\sqrt[3]{x}} \\ + \frac{b}{\sqrt[3]{x}} + \frac{b}{\sqrt[3]{x}}$$

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

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

$$((\sqrt[3]{x}) + (\sqrt[3]{x})^4 = (4)\sqrt[3]{x}^4 (x^2)^0 + (4)\sqrt[3]{x}^3 (x^2)^1 + (4)\sqrt[3]{x}^2 (x^2)^2 + (4)\sqrt[3]{x}^4 (x^2)^3 + (4)\sqrt[3]{x}^3 (x^2)^4 = 1 \cdot x^{\frac{4}{3}} \cdot 1 + 4 \cdot x$$

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

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

Rješenje

$$((\sqrt[3]{x}) + (\sqrt[4]{x^2})^4 = (4)\sqrt[3]{x^4}(x^2)^0 + (4)\sqrt[3]{x^3}(x^2)^1 + (4)\sqrt[3]{x^2}(x^2)^2 + (4)\sqrt[3]{x^4}(x^2)^3 + (4)\sqrt[3]{x^0}(x^2)^4 = 1 \cdot x^{\frac{4}{3}} \cdot 1 + 4 \cdot x \cdot x^2$$

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

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

Rješenje

$$\begin{pmatrix} \frac{a}{\sqrt[3]{x}} + \frac{b}{\sqrt[3]{x}} \\ + \frac{b}{\sqrt[3]{x}} + \frac{b}{\sqrt[3]{x}} \\ + \frac{4}{\sqrt[3]{x}} + \frac{b}{\sqrt[3]{x}} \\ + \frac{b}{\sqrt[3]{x}} + \frac{b}{\sqrt[3]{x}} \\ + \frac{b}{\sqrt[3]{x}} + \frac{b}{\sqrt[3]{x}} \\ + \frac{b}{\sqrt[3]{x}} + \frac{b}{\sqrt[3]{x}} + \frac{b}{\sqrt[3]{x}} \\ + \frac{b}{\sqrt[3]{x}} + \frac{b}{\sqrt[3]{x}} + \frac{b}{\sqrt[3]{x}} \\ + \frac{b}{\sqrt[3]{x}} + \frac{b}{\sqrt[3]{x}} + \frac{b}{\sqrt[3]{x}} + \frac{b}{\sqrt[3]{x}} \\ + \frac{b}{\sqrt[3]{x}} + \frac{b}{\sqrt[3]$$

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

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

Rješenje

$$\begin{pmatrix} \frac{a}{\sqrt[3]{x}} + \frac{b}{\sqrt[3]{x}} \\ + \frac{b}{\sqrt[3]{x}} + \frac{b}{\sqrt[3]{x}} \\ + \frac{4}{\sqrt[3]{x}} + \frac{b}{\sqrt[3]{x}} \\ + \frac{b}{\sqrt[3]{x}} + \frac{b}{\sqrt[3]{x}} \\ + \frac{b}{\sqrt[3]{x}} + \frac{b}{\sqrt[3]{x}} \\ + \frac{b}{\sqrt[3]{x}} + \frac{b}{\sqrt[3]{x}} + \frac{b}{\sqrt[3]{x}} \\ + \frac{b}{\sqrt[3]{x}} + \frac{b}{\sqrt[3]{x}} + \frac{b}{\sqrt[3]{x}} \\ + \frac{b}{\sqrt[3]{x}} + \frac{b}{\sqrt[3]{x}} + \frac{b}{\sqrt[3]{x}} + \frac{b}{\sqrt[3]{x}} \\ + \frac{b}{\sqrt[3]{x}} + \frac{b}{\sqrt[3]$$

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

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

Rješenje

$$((\sqrt[3]{x}) + (\sqrt[2]{x^2})^4 = {4 \choose 0} \sqrt[3]{x^4} (x^2)^0 + {4 \choose 1} \sqrt[3]{x^3} (x^2)^1 +$$

$$+ {4 \choose 2} \sqrt[3]{x^2} (x^2)^2 + {4 \choose 3} \sqrt[3]{x^1} (x^2)^3 + {4 \choose 4} \sqrt[3]{x^0} (x^2)^4 =$$

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

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

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

Rješenje

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

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

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

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

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

Rješenje

$$((\sqrt[3]{x}) + (\sqrt[2]{x^2})^4 = {4 \choose 0} \sqrt[3]{x^4} (x^2)^0 + {4 \choose 1} \sqrt[3]{x^3} (x^2)^1 +$$

$$+ {4 \choose 2} \sqrt[3]{x^2} (x^2)^2 + {4 \choose 3} \sqrt[3]{x^1} (x^2)^3 + {4 \choose 4} \sqrt[3]{x^0} (x^2)^4 =$$

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

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

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

Rješenje

$$((\sqrt[3]{x}) + (\sqrt[2]{x^2})^4 = {4 \choose 0} \sqrt[3]{x^4} (x^2)^0 + {4 \choose 1} \sqrt[3]{x^3} (x^2)^1 +$$

$$+ {4 \choose 2} \sqrt[3]{x^2} (x^2)^2 + {4 \choose 3} \sqrt[3]{x^1} (x^2)^3 + {4 \choose 4} \sqrt[3]{x^0} (x^2)^4 =$$

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

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

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

Rješenje

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

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

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

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

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

Rješenje

$$((\sqrt[3]{x}) + (x^2))^4 = {4 \choose 0} \sqrt[3]{x}^4 (x^2)^0 + {4 \choose 1} \sqrt[3]{x}^3 (x^2)^1 +$$

$$+ {4 \choose 2} \sqrt[3]{x}^2 (x^2)^2 + {4 \choose 3} \sqrt[3]{x}^1 (x^2)^3 + {4 \choose 4} \sqrt[3]{x}^0 (x^2)^4 =$$

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

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

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

Rješenje

$$((\sqrt[3]{x}) + (x^{2}))^{4} = {4 \choose 0} \sqrt[3]{x}^{4} (x^{2})^{0} + {4 \choose 1} \sqrt[3]{x}^{3} (x^{2})^{1} +$$

$$+ {4 \choose 2} \sqrt[3]{x}^{2} (x^{2})^{2} + {4 \choose 3} \sqrt[3]{x}^{1} (x^{2})^{3} + {4 \choose 4} \sqrt[3]{x}^{0} (x^{2})^{4} =$$

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

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

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

Rješenje

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

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

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

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

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

Rješenje

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

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

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

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

 $\sqrt[n]{x^m} = x^{\frac{m}{n}} \mid (x^m)^n = x^{mn}$

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

Rješenje

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

 $\sqrt[n]{x^m} = x^{\frac{m}{n}} \mid (x^m)^n = x^{mn}$

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

Rješenje

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

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

Rješenje

$$(\sqrt[3]{x})^4 = {4 \choose 0} \sqrt[3]{x}^4 (x^2)^0 + {4 \choose 1} \sqrt[3]{x}^3 (x^2)^1 +$$

$$+ {4 \choose 2} \sqrt[3]{x}^2 (x^2)^2 + {4 \choose 3} \sqrt[3]{x}^1 (x^2)^3 + {4 \choose 4} \sqrt[3]{x}^0 (x^2)^4 =$$

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

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

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

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

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

Rješenje

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

 $(x^m)^n = x^{mn}$

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

Rješenje

$$(\sqrt[3]{x}) + (\sqrt[2]{x})^4 = {4 \choose 0} \sqrt[3]{x}^4 (x^2)^0 + {4 \choose 1} \sqrt[3]{x}^3 (x^2)^1 +$$

$$+ {4 \choose 2} \sqrt[3]{x}^2 (x^2)^2 + {4 \choose 3} \sqrt[3]{x}^1 (x^2)^3 + {4 \choose 4} \sqrt[3]{x}^0 (x^2)^4 =$$

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

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

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

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

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

Rješenje

$$(3x) + (x^{2})^{4} = {4 \choose 0} \sqrt[3]{x^{4}} (x^{2})^{0} + {4 \choose 1} \sqrt[3]{x^{3}} (x^{2})^{1} +$$

$$+ {4 \choose 2} \sqrt[3]{x^{2}} (x^{2})^{2} + {4 \choose 3} \sqrt[3]{x^{1}} (x^{2})^{3} + {4 \choose 4} \sqrt[3]{x^{0}} (x^{2})^{4} =$$

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

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

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

 $(x^m)^n = x^{mn}$

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

Rješenje

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

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

Domaća zadaća

Zadatak

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

Domaća zadaća

Zadatak

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

Rješenje

$$+ {4 \choose 2} \sqrt[3]{x^2} (-x^2)^2 + {4 \choose 3} \sqrt[3]{x^1} (-x^2)^3 + {4 \choose 4} \sqrt[3]{x^0} (-x^2)^4 =$$

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

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

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

četvrti zadatak

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

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

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

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

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

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

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

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

$$\left(\underbrace{x^{\frac{3}{2}}y}^{3} + \underbrace{y^{-1}}^{b} \right)^{5} = \begin{pmatrix} 5 \\ 0 \end{pmatrix}$$

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

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

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

$$(x^{\frac{3}{2}}y) + (y^{-1})^{5} = {5 \choose 0} (x^{\frac{3}{2}}y)^{5} (y^{-1})^{0}$$

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

$$\left(x^{\frac{3}{2}}y\right) + \left(y^{-1}\right)^{5} = \left(0\right) \left(x^{\frac{3}{2}}y\right)^{5} \left(y^{-1}\right)^{0} +$$

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

$$(x^{\frac{3}{2}}y) + (y^{-1})^{5} = (5)(x^{\frac{3}{2}}y)^{5}(y^{-1})^{0} + (5)$$

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

$$(x^{\frac{3}{2}}y) + (y^{-1})^{5} = {5 \choose 0} (x^{\frac{3}{2}}y)^{5} (y^{-1})^{0} + {5 \choose 1} (x^{\frac{3}{2}}y)^{4}$$

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

$$(x^{\frac{3}{2}}y) + (y^{-1})^{5} = {5 \choose 0} (x^{\frac{3}{2}}y)^{5} (y^{-1})^{0} + {5 \choose 1} (x^{\frac{3}{2}}y)^{4} (y^{-1})^{1}$$

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

Rješenje

$$(x^{\frac{3}{2}}y) + (y^{-1})^{5} = {5 \choose 0} (x^{\frac{3}{2}}y)^{5} (y^{-1})^{0} + {5 \choose 1} (x^{\frac{3}{2}}y)^{4} (y^{-1})^{1} +$$

+

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

$$\left(x^{\frac{3}{2}}y\right) + \left(y^{-1}\right)^{5} = \left(5 \atop 0\right) \left(x^{\frac{3}{2}}y\right)^{5} \left(y^{-1}\right)^{0} + \left(5 \atop 1\right) \left(x^{\frac{3}{2}}y\right)^{4} \left(y^{-1}\right)^{1} + \left(5 \atop 2\right)$$

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

$$\left(x^{\frac{3}{2}}y\right) + \left(y^{-1}\right)^{5} = \left(5 \atop 0\right) \left(x^{\frac{3}{2}}y\right)^{5} \left(y^{-1}\right)^{0} + \left(5 \atop 1\right) \left(x^{\frac{3}{2}}y\right)^{4} \left(y^{-1}\right)^{1} + \left(5 \atop 2\right) \left(x^{\frac{3}{2}}y\right)^{3}$$

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

$$\left(x^{\frac{3}{2}}y\right) + \left(y^{-1}\right)^{5} = \left(5 \atop 0\right) \left(x^{\frac{3}{2}}y\right)^{5} \left(y^{-1}\right)^{0} + \left(5 \atop 1\right) \left(x^{\frac{3}{2}}y\right)^{4} \left(y^{-1}\right)^{1} + \left(5 \atop 2\right) \left(x^{\frac{3}{2}}y\right)^{3} \left(y^{-1}\right)^{2}$$

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

$$\left(x^{\frac{3}{2}}y\right) + \left(y^{-1}\right)^{5} = \left(5 \atop 0\right) \left(x^{\frac{3}{2}}y\right)^{5} \left(y^{-1}\right)^{0} + \left(5 \atop 1\right) \left(x^{\frac{3}{2}}y\right)^{4} \left(y^{-1}\right)^{1} + \left(5 \atop 2\right) \left(x^{\frac{3}{2}}y\right)^{3} \left(y^{-1}\right)^{2} +$$

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

$$\left(x^{\frac{3}{2}}y\right) + \left(y^{-1}\right)^{5} = {5 \choose 0} \left(x^{\frac{3}{2}}y\right)^{5} \left(y^{-1}\right)^{0} + {5 \choose 1} \left(x^{\frac{3}{2}}y\right)^{4} \left(y^{-1}\right)^{1} + \left(\frac{5}{2}\right) \left(x^{\frac{3}{2}}y\right)^{3} \left(y^{-1}\right)^{2} + {5 \choose 3}$$

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

$$\left(x^{\frac{3}{2}}y\right) + \left(y^{-1}\right)^{5} = \left(\frac{5}{0}\right) \left(x^{\frac{3}{2}}y\right)^{5} \left(y^{-1}\right)^{0} + \left(\frac{5}{1}\right) \left(x^{\frac{3}{2}}y\right)^{4} \left(y^{-1}\right)^{1} + \left(\frac{5}{2}\right) \left(x^{\frac{3}{2}}y\right)^{3} \left(y^{-1}\right)^{2} + \left(\frac{5}{3}\right) \left(x^{\frac{3}{2}}y\right)^{2}$$

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

$$\left(x^{\frac{3}{2}}y\right) + \left(y^{-1}\right)^{5} = \left(\frac{5}{0}\right) \left(x^{\frac{3}{2}}y\right)^{5} \left(y^{-1}\right)^{0} + \left(\frac{5}{1}\right) \left(x^{\frac{3}{2}}y\right)^{4} \left(y^{-1}\right)^{1} + \left(\frac{5}{2}\right) \left(x^{\frac{3}{2}}y\right)^{3} \left(y^{-1}\right)^{2} + \left(\frac{5}{3}\right) \left(x^{\frac{3}{2}}y\right)^{2} \left(y^{-1}\right)^{3}$$

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

$$\left(x^{\frac{3}{2}}y\right) + \left(y^{-1}\right)^{5} = \left(\frac{5}{0}\right) \left(x^{\frac{3}{2}}y\right)^{5} \left(y^{-1}\right)^{0} + \left(\frac{5}{1}\right) \left(x^{\frac{3}{2}}y\right)^{4} \left(y^{-1}\right)^{1} + \left(\frac{5}{2}\right) \left(x^{\frac{3}{2}}y\right)^{3} \left(y^{-1}\right)^{2} + \left(\frac{5}{3}\right) \left(x^{\frac{3}{2}}y\right)^{2} \left(y^{-1}\right)^{3} +$$

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

$$\left(x^{\frac{3}{2}}y\right) + \left(y^{-1}\right)^{5} = {5 \choose 0} \left(x^{\frac{3}{2}}y\right)^{5} \left(y^{-1}\right)^{0} + {5 \choose 1} \left(x^{\frac{3}{2}}y\right)^{4} \left(y^{-1}\right)^{1} +$$

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

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

$$\left(x^{\frac{3}{2}}y\right) + \left(y^{-1}\right)^{5} = \left(5 \atop 0\right) \left(x^{\frac{3}{2}}y\right)^{5} \left(y^{-1}\right)^{0} + \left(5 \atop 1\right) \left(x^{\frac{3}{2}}y\right)^{4} \left(y^{-1}\right)^{1} + \\
+ \left(5 \atop 2\right) \left(x^{\frac{3}{2}}y\right)^{3} \left(y^{-1}\right)^{2} + \left(5 \atop 3\right) \left(x^{\frac{3}{2}}y\right)^{2} \left(y^{-1}\right)^{3} + \left(5 \atop 4\right) \left(x^{\frac{3}{2}}y\right)^{1}$$

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

$$\left(x^{\frac{3}{2}}y\right) + \left(y^{-1}\right)^{5} = {5 \choose 0} \left(x^{\frac{3}{2}}y\right)^{5} \left(y^{-1}\right)^{0} + {5 \choose 1} \left(x^{\frac{3}{2}}y\right)^{4} \left(y^{-1}\right)^{1} +
+ {5 \choose 2} \left(x^{\frac{3}{2}}y\right)^{3} \left(y^{-1}\right)^{2} + {5 \choose 3} \left(x^{\frac{3}{2}}y\right)^{2} \left(y^{-1}\right)^{3} + {5 \choose 4} \left(x^{\frac{3}{2}}y\right)^{1} \left(y^{-1}\right)^{4}$$

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

Rješenje

$$\left(x^{\frac{3}{2}}y\right) + \left(y^{-1}\right)^{5} = \left(5 \atop 0\right) \left(x^{\frac{3}{2}}y\right)^{5} \left(y^{-1}\right)^{0} + \left(5 \atop 1\right) \left(x^{\frac{3}{2}}y\right)^{4} \left(y^{-1}\right)^{1} + \\
+ \left(5 \atop 2\right) \left(x^{\frac{3}{2}}y\right)^{3} \left(y^{-1}\right)^{2} + \left(5 \atop 3\right) \left(x^{\frac{3}{2}}y\right)^{2} \left(y^{-1}\right)^{3} + \left(5 \atop 4\right) \left(x^{\frac{3}{2}}y\right)^{1} \left(y^{-1}\right)^{4} + \\$$

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

$$\frac{a}{\left(x^{\frac{3}{2}}y\right)} + y^{-1} \int_{0}^{5} = {5 \choose 0} \left(x^{\frac{3}{2}}y\right)^{5} \left(y^{-1}\right)^{0} + {5 \choose 1} \left(x^{\frac{3}{2}}y\right)^{4} \left(y^{-1}\right)^{1} +
+ {5 \choose 2} \left(x^{\frac{3}{2}}y\right)^{3} \left(y^{-1}\right)^{2} + {5 \choose 3} \left(x^{\frac{3}{2}}y\right)^{2} \left(y^{-1}\right)^{3} + {5 \choose 4} \left(x^{\frac{3}{2}}y\right)^{1} \left(y^{-1}\right)^{4} +
+ {5 \choose 5}$$

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

$$\frac{a}{\left(x^{\frac{3}{2}}y\right)} + y^{-1} \int_{y^{-1}}^{5} = {5 \choose 0} \left(x^{\frac{3}{2}}y\right)^{5} \left(y^{-1}\right)^{0} + {5 \choose 1} \left(x^{\frac{3}{2}}y\right)^{4} \left(y^{-1}\right)^{1} +
+ {5 \choose 2} \left(x^{\frac{3}{2}}y\right)^{3} \left(y^{-1}\right)^{2} + {5 \choose 3} \left(x^{\frac{3}{2}}y\right)^{2} \left(y^{-1}\right)^{3} + {5 \choose 4} \left(x^{\frac{3}{2}}y\right)^{1} \left(y^{-1}\right)^{4} +
+ {5 \choose 5} \left(x^{\frac{3}{2}}y\right)^{0}$$

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

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

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

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

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

$$\left(x^{\frac{3}{2}}y\right) + \left(y^{-1}\right)^{5} = {5 \choose 0} \left(x^{\frac{3}{2}}y\right)^{5} \left(y^{-1}\right)^{0} + {5 \choose 1} \left(x^{\frac{3}{2}}y\right)^{4} \left(y^{-1}\right)^{1} +
+ {5 \choose 2} \left(x^{\frac{3}{2}}y\right)^{3} \left(y^{-1}\right)^{2} + {5 \choose 3} \left(x^{\frac{3}{2}}y\right)^{2} \left(y^{-1}\right)^{3} + {5 \choose 4} \left(x^{\frac{3}{2}}y\right)^{1} \left(y^{-1}\right)^{4} +
+ {5 \choose 5} \left(x^{\frac{3}{2}}y\right)^{0} \left(y^{-1}\right)^{5} = 1$$

 $(x^m)^n = x^{mn} \quad | \quad (xy)^n = x^n y^n$

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

$$(x^{\frac{3}{2}}y) + (y^{-1})^{5} = {5 \choose 0} (x^{\frac{3}{2}}y)^{5} (y^{-1})^{0} + {5 \choose 1} (x^{\frac{3}{2}}y)^{4} (y^{-1})^{1} +$$

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

$$+\binom{5}{5}(x^{\frac{3}{2}}y)^{0}(y^{-1})^{5}=1$$

 $(x^m)^n = x^{mn} \quad | \quad (xy)^n = x^n y^n$

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

$$(x^{\frac{3}{2}}y) + (y^{-1})^{5} = {5 \choose 0} (x^{\frac{3}{2}}y)^{5} (y^{-1})^{0} + {5 \choose 1} (x^{\frac{3}{2}}y)^{4} (y^{-1})^{1} +$$

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

$$+ {5 \choose 5} (x^{\frac{3}{2}}y)^0 (y^{-1})^5 = 1 \cdot x^{\frac{15}{2}}y^5$$

 $(x^m)^n = x^{mn} \quad | \quad (xy)^n = x^n y^n$

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

$$(x^{\frac{3}{2}}y) + (y^{-1})^{5} = {5 \choose 0} (x^{\frac{3}{2}}y)^{5} (y^{-1})^{0} + {5 \choose 1} (x^{\frac{3}{2}}y)^{4} (y^{-1})^{1} +$$

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

$$+ {5 \choose 5} (x^{\frac{3}{2}}y)^0 (y^{-1})^5 = 1 \cdot x^{\frac{15}{2}}y^5 \cdot 1$$

 $(x^m)^n = x^{mn} \quad | \quad (xy)^n = x^n y^n$

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

$$\left(x^{\frac{3}{2}}y\right) + \left(y^{-1}\right)^{5} = \left(5 \atop 0\right) \left(x^{\frac{3}{2}}y\right)^{5} \left(y^{-1}\right)^{0} + \left(5 \atop 1\right) \left(x^{\frac{3}{2}}y\right)^{4} \left(y^{-1}\right)^{1} +$$

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

$$+\binom{5}{5}(x^{\frac{3}{2}}y)^{0}(y^{-1})^{5} = 1 \cdot x^{\frac{15}{2}}y^{5} \cdot 1 +$$

 $(x^m)^n = x^{mn} \quad | \quad (xy)^n = x^n y^n$

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

$$\left(x^{\frac{3}{2}}y\right) + \left(y^{-1}\right)^{5} = \left(5 \atop 0\right) \left(x^{\frac{3}{2}}y\right)^{5} \left(y^{-1}\right)^{0} + \left(5 \atop 1\right) \left(x^{\frac{3}{2}}y\right)^{4} \left(y^{-1}\right)^{1} +$$

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

$$+ {5 \choose 5} (x^{\frac{3}{2}}y)^{0} (y^{-1})^{5} = 1 \cdot x^{\frac{15}{2}} y^{5} \cdot 1 + 5$$

 $\left(x^{m}\right)^{n} = x^{mn} \quad \left(xy\right)^{n} = x^{n}y^{n}$

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

$$(x^{\frac{3}{2}y} + (y^{-1}))^{5} = (5)(x^{\frac{3}{2}}y)^{5}(y^{-1})^{0} + (5)(x^{\frac{3}{2}}y)^{4}(y^{-1})^{1} + (5)(x^{\frac{3}{2}}y)^{4}(y^{-1})^{2} + (5)(x^{\frac{3}{2}}y)^{4}(y^{-1})^{2$$

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

$$+ {5 \choose 5} (x^{\frac{3}{2}}y)^{0} (y^{-1})^{5} = 1 \cdot x^{\frac{15}{2}} y^{5} \cdot 1 + 5 \cdot x^{6} y^{4}$$

 $(x^m)^n = x^{mn} \qquad (xy)^n = x^n y^n$

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

$$(x^{\frac{3}{2}}y) + (y^{-1})^{5} = {5 \choose 0} (x^{\frac{3}{2}}y)^{5} (y^{-1})^{0} + {5 \choose 1} (x^{\frac{3}{2}}y)^{4} (y^{-1})^{1} +$$

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

$$+ {5 \choose 5} (x^{\frac{3}{2}}y)^{0} (y^{-1})^{5} = 1 \cdot x^{\frac{15}{2}} y^{5} \cdot 1 + 5 \cdot x^{6} y^{4} \cdot y^{-1}$$

$$(x^m)^n = x^{mn} \qquad (xy)^n = x^n y^n$$

$$(xy)^n = x^n y^n$$

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

$$\left(x^{\frac{3}{2}}y\right) + \left(y^{-1}\right)^{5} = \left(5 \atop 0\right) \left(x^{\frac{3}{2}}y\right)^{5} \left(y^{-1}\right)^{0} + \left(5 \atop 1\right) \left(x^{\frac{3}{2}}y\right)^{4} \left(y^{-1}\right)^{1} +$$

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

$$+ {5 \choose 5} (x^{\frac{3}{2}}y)^{0} (y^{-1})^{5} = 1 \cdot x^{\frac{15}{2}}y^{5} \cdot 1 + 5 \cdot x^{6}y^{4} \cdot y^{-1} +$$

$$(x^m)^n = x^{mn} \qquad (xy)^n = x^n y^n$$

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

$$(x^{\frac{3}{2}}y) + (y^{-1})^{5} = {5 \choose 0} (x^{\frac{3}{2}}y)^{5} (y^{-1})^{0} + {5 \choose 1} (x^{\frac{3}{2}}y)^{4} (y^{-1})^{1} +$$

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

$$+ {5 \choose 5} (x^{\frac{3}{2}}y)^{0} (y^{-1})^{5} = 1 \cdot x^{\frac{15}{2}} y^{5} \cdot 1 + 5 \cdot x^{6} y^{4} \cdot y^{-1} + 10$$

$$(x^m)^n = x^{mn} \qquad (xy)^n = x^n y^n$$

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

$$(x^{\frac{3}{2}}y) + (y^{-1})^{5} = {5 \choose 0} (x^{\frac{3}{2}}y)^{5} (y^{-1})^{0} + {5 \choose 1} (x^{\frac{3}{2}}y)^{4} (y^{-1})^{1} +$$

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

$$+ \left(\frac{5}{5}\right) \left(x^{\frac{3}{2}}y\right)^{0} \left(y^{-1}\right)^{5} = 1 \cdot x^{\frac{15}{2}}y^{5} \cdot 1 + 5 \cdot x^{6}y^{4} \cdot y^{-1} + 10 \cdot x^{\frac{9}{2}}y^{3}$$

 $\left| (x^m)^n = x^{mn} \right| (xy)^n = x^n y^n$

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

$$(x^{\frac{3}{2}y} + (y^{-1}))^{5} = {5 \choose 0} (x^{\frac{3}{2}}y)^{5} (y^{-1})^{0} + {5 \choose 1} (x^{\frac{3}{2}}y)^{4} (y^{-1})^{1} +$$

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

$$+ \binom{5}{5} (x^{\frac{3}{2}}y)^{0} (y^{-1})^{5} = 1 \cdot x^{\frac{15}{2}} y^{5} \cdot 1 + 5 \cdot x^{6} y^{4} \cdot y^{-1} + 10 \cdot x^{\frac{9}{2}} y^{3} \cdot y^{-2}$$

$$(x^m)^n = x^{mn} \qquad (xy)^n = x^n y^n$$

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

Rješenje

$$(x^{\frac{3}{2}}y) + (y^{-1})^{5} = {5 \choose 0}(x^{\frac{3}{2}}y)^{5}(y^{-1})^{0} + {5 \choose 1}(x^{\frac{3}{2}}y)^{4}(y^{-1})^{1} +$$

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

$$+ \binom{5}{5} \left(x^{\frac{3}{2}}y\right)^{0} \left(y^{-1}\right)^{5} = 1 \cdot x^{\frac{15}{2}}y^{5} \cdot 1 + 5 \cdot x^{6}y^{4} \cdot y^{-1} + 10 \cdot x^{\frac{9}{2}}y^{3} \cdot y^{-2} +$$

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$$(x^m)^n = x^{mn} \qquad (xy)^n = x^n y^n$$

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

$$(x^{\frac{3}{2}}y) + (y^{-1})^{5} = {5 \choose 0} (x^{\frac{3}{2}}y)^{5} (y^{-1})^{0} + {5 \choose 1} (x^{\frac{3}{2}}y)^{4} (y^{-1})^{1} +$$

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

$$+ {5 \choose 5} (x^{\frac{3}{2}}y)^0 (y^{-1})^5 = 1 \cdot x^{\frac{15}{2}}y^5 \cdot 1 + 5 \cdot x^6y^4 \cdot y^{-1} + 10 \cdot x^{\frac{9}{2}}y^3 \cdot y^{-2} +$$

$$(x^m)^n = x^{mn} \qquad (xy)^n = x^n y^n$$

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

$$(x^{\frac{3}{2}}y) + (y^{-1})^{5} = {5 \choose 0} (x^{\frac{3}{2}}y)^{5} (y^{-1})^{0} + {5 \choose 1} (x^{\frac{3}{2}}y)^{4} (y^{-1})^{1} +$$

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

$$+ {5 \choose 5} (x^{\frac{3}{2}}y)^{0} (y^{-1})^{5} = 1 \cdot x^{\frac{15}{2}} y^{5} \cdot 1 + 5 \cdot x^{6} y^{4} \cdot y^{-1} + 10 \cdot x^{\frac{9}{2}} y^{3} \cdot y^{-2} + 10 \cdot x^{3} y^{2}$$

$$(x^m)^n = x^{mn} \qquad (xy)^n = x^n y^n$$

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

$$(x^{\frac{3}{2}}y) + (y^{-1})^{5} = {5 \choose 0} (x^{\frac{3}{2}}y)^{5} (y^{-1})^{0} + {5 \choose 1} (x^{\frac{3}{2}}y)^{4} (y^{-1})^{1} +$$

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

$$+ {\binom{2}{3}} {\binom{x^2y}{y^3}} {\binom{y^{-1}}{5}} + {\binom{3}{3}} {\binom{x^2y}{y^3}} {\binom{y^{-1}}{5}} + {\binom{5}{5}} {(x^{\frac{3}{2}}y)^0} {(y^{-1})^5} = 1 \cdot x^{\frac{15}{2}} y^5 \cdot 1 + 5 \cdot x^6 y^4 \cdot y^{-1} + 10 \cdot x^{\frac{9}{2}} y^3 \cdot y^{-2} +$$

$$+ 10 \cdot x^3 y^2 \cdot y^{-3}$$

$$(x^m)^n = x^{mn} \qquad (xy)^n = x^n y^n$$

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

$$(x^{\frac{3}{2}y} + (y^{-1}))^{5} = {5 \choose 0} (x^{\frac{3}{2}}y)^{5} (y^{-1})^{0} + {5 \choose 1} (x^{\frac{3}{2}}y)^{4} (y^{-1})^{1} +$$

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

$$+ {5 \choose 5} (x^{\frac{3}{2}}y)^{0} (y^{-1})^{5} = 1 \cdot x^{\frac{15}{2}}y^{5} \cdot 1 + 5 \cdot x^{6}y^{4} \cdot y^{-1} + 10 \cdot x^{\frac{9}{2}}y^{3} \cdot y^{-2} +$$

$$+ 10 \cdot x^3 v^2 \cdot v^{-3} +$$

$$(x^m)^n = x^{mn} \qquad (xy)^n = x^n y^n$$

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

$$(x^{\frac{3}{2}}y) + (y^{-1})^{5} = {5 \choose 0} (x^{\frac{3}{2}}y)^{5} (y^{-1})^{0} + {5 \choose 1} (x^{\frac{3}{2}}y)^{4} (y^{-1})^{1} +$$

$$+ \binom{5}{2} \left(x^{\frac{3}{2}}y\right)^3 \left(y^{-1}\right)^2 + \binom{5}{3} \left(x^{\frac{3}{2}}y\right)^2 \left(y^{-1}\right)^3 + \binom{5}{4} \left(x^{\frac{3}{2}}y\right)^1 \left(y^{-1}\right)^4 +$$

$$+ {5 \choose 5} (x^{\frac{3}{2}}y)^{0} (y^{-1})^{5} = 1 \cdot x^{\frac{15}{2}}y^{5} \cdot 1 + 5 \cdot x^{6}y^{4} \cdot y^{-1} + 10 \cdot x^{\frac{9}{2}}y^{3} \cdot y^{-2} + 10 \cdot x^{3}y^{2} \cdot y^{-3} + 5$$

$$(x^m)^n = x^{mn} \qquad (xy)^n = x^n y^n$$

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y+y^{-1}\right)^5$.

$$\underbrace{\left(\!\!\!\begin{array}{c} \frac{a}{3} \\ x^{\frac{3}{2}} y \!\!\!\end{array}\!\!\!\right)}^{5} + \underbrace{\left(\!\!\!\begin{array}{c} b \\ 0 \!\!\!\end{array}\!\!\right)}^{5} = \left(\!\!\!\begin{array}{c} 5 \\ 0 \!\!\!\end{array}\!\!\right) \left(\!\!\!\begin{array}{c} x^{\frac{3}{2}} y \!\!\!\right)^{5} \! \left(y^{-1}\right)^{0} + \left(\!\!\!\begin{array}{c} 5 \\ 1 \!\!\!\end{array}\!\!\right) \! \left(x^{\frac{3}{2}} y \right)^{4} \! \left(y^{-1}\right)^{1} + \underbrace{\left(\!\!\!\begin{array}{c} 5 \\ 1 \!\!\!\end{array}\!\!\right)}^{5} \left(x^{\frac{3}{2}} y \right)^{4} \! \left(y^{-1}\right)^{1} + \underbrace{\left(\!\!\!\begin{array}{c} 5 \\ 1 \!\!\!\end{array}\!\!\right)}^{5} \left(x^{\frac{3}{2}} y \right)^{4} \! \left(y^{-1}\right)^{1} + \underbrace{\left(\!\!\!\begin{array}{c} 5 \\ 1 \!\!\!\end{array}\!\!\right)}^{5} \left(x^{\frac{3}{2}} y \right)^{4} \! \left(y^{-1}\right)^{1} + \underbrace{\left(\!\!\!\begin{array}{c} 5 \\ 1 \!\!\!\end{array}\!\!\right)}^{5} \left(x^{\frac{3}{2}} y \right)^{4} \! \left(y^{-1}\right)^{1} + \underbrace{\left(\!\!\!\begin{array}{c} 5 \\ 1 \!\!\!\end{array}\!\!\right)}^{5} \left(x^{\frac{3}{2}} y \right)^{4} \! \left(y^{-1}\right)^{1} + \underbrace{\left(\!\!\!\begin{array}{c} 5 \\ 1 \!\!\!\end{array}\!\!\right)}^{5} \left(x^{\frac{3}{2}} y \right)^{4} \! \left(y^{-1}\right)^{1} + \underbrace{\left(\!\!\!\begin{array}{c} 5 \\ 1 \!\!\!\end{array}\!\!\right)}^{5} \left(x^{\frac{3}{2}} y \right)^{4} \! \left(y^{-1}\right)^{1} + \underbrace{\left(\!\!\!\begin{array}{c} 5 \\ 1 \!\!\!\end{array}\!\!\right)}^{5} \left(x^{\frac{3}{2}} y \right)^{4} \! \left(y^{-1}\right)^{1} + \underbrace{\left(\!\!\!\begin{array}{c} 5 \\ 1 \!\!\!\end{array}\!\!\right)}^{5} \left(x^{\frac{3}{2}} y \right)^{4} \! \left(y^{-1}\right)^{1} + \underbrace{\left(\!\!\!\begin{array}{c} 5 \\ 1 \!\!\!\end{array}\!\!\right)}^{5} \left(x^{\frac{3}{2}} y \right)^{4} \! \left(y^{-1}\right)^{1} + \underbrace{\left(\!\!\!\begin{array}{c} 5 \\ 1 \!\!\!\end{array}\!\!\right)}^{5} \left(x^{\frac{3}{2}} y \right)^{4} \! \left(y^{-1}\right)^{1} + \underbrace{\left(\!\!\!\begin{array}{c} 5 \\ 1 \!\!\!\end{array}\!\!\right)}^{5} \left(x^{\frac{3}{2}} y \right)^{4} \! \left(y^{-1}\right)^{1} + \underbrace{\left(\!\!\!\begin{array}{c} 5 \\ 1 \!\!\!\right)}^{5} \left(x^{\frac{3}{2}} y \right)^{4} \! \left(y^{-1}\right)^{1} + \underbrace{\left(\!\!\!\begin{array}{c} 5 \\ 1 \!\!\!\end{array}\!\!\right)}^{5} \left(x^{\frac{3}{2}} y \right)^{4} \! \left(y^{-1}\right)^{1} + \underbrace{\left(\!\!\!\begin{array}{c} 5 \\ 1 \!\!\!\end{array}\!\!\right)}^{5} \left(x^{\frac{3}{2}} y \right)^{4} \! \left(y^{-1}\right)^{1} + \underbrace{\left(\!\!\!\begin{array}{c} 5 \\ 1 \!\!\!\right)}^{5} \left(x^{\frac{3}{2}} y \right)^{4} \! \left(y^{-1}\right)^{1} + \underbrace{\left(\!\!\!\begin{array}{c} 5 \\ 1 \!\!\!\right)}^{5} \left(x^{\frac{3}{2}} y \right)^{4} + \underbrace{\left(\!\!\!\begin{array}{c} 5 \\ 1 \!\!\!\right)}^{5} \left(x^{\frac{3}{2}} y \right)^{4} + \underbrace{\left(\!\!\!\begin{array}{c} 5 \\ 1 \!\!\!\right)}^{5} \left(x^{\frac{3}{2}} y \right)^{4} + \underbrace{\left(\!\!\!\begin{array}{c} 5 \\ 1 \!\!\!\right)}^{5} \left(x^{\frac{3}{2}} y \right)^{4} + \underbrace{\left(\!\!\!\begin{array}{c} 5 \\ 1 \!\!\!\right)}^{5} \left(x^{\frac{3}{2}} y \right)^{4} + \underbrace{\left(\!\!\!\begin{array}{c} 5 \\ 1 \!\!\!\right)}^{5} \left(x^{\frac{3}{2}} y \right)^{4} + \underbrace{\left(\!\!\!\begin{array}{c} 5 \\ 1 \!\!\!\right)}^{5} \left(x^{\frac{3}{2}} y \right)^{4} + \underbrace{\left(\!\!\!\begin{array}{c} 5 \\ 1 \!\!\!\right)}^{5} \left(x^{\frac{3}{2}} y \right)^{4} + \underbrace{\left(\!\!\!\begin{array}{c} 5 \\ 1 \!\!\!\right)}^{5} \left(x^{\frac{3}{2}} y \right)^{4} + \underbrace{\left(\!\!\!\begin{array}{c} 5 \\ 1 \!\!\!\right)}^{5} \left(x^{\frac{3}{2}} y \right)^{4} + \underbrace{\left(\!\!\!\begin{array}{c} 5 \\ 1 \!\!\!\right)}^{5} \left(x^{\frac{3}{2}} y \right)^{4} + \underbrace{\left(\!\!\!\begin{array}{c} 5 \\ 1 \!\!\!\right)}^{5} \left(x^{\frac{3$$

$$+\binom{5}{2}ig(x^{rac{3}{2}}yig)^3ig(y^{-1}ig)^2+igg(^5{3}ig)ig(x^{rac{3}{2}}yig)^2ig(y^{-1}ig)^3+igg(^5{4}ig)ig(x^{rac{3}{2}}yig)^1ig(y^{-1}ig)^4+$$

$$+ {5 \choose 5} (x^{\frac{3}{2}}y)^{0} (y^{-1})^{5} = 1 \cdot x^{\frac{15}{2}}y^{5} \cdot 1 + 5 \cdot x^{6}y^{4} \cdot y^{-1} + 10 \cdot x^{\frac{9}{2}}y^{3} \cdot y^{-2} + 10 \cdot x^{3}y^{2} \cdot y^{-3} + 5 \cdot x^{\frac{3}{2}}y$$

$$(x^m)^n = x^{mn} \qquad (xy)^n = x^n y^n$$

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y+y^{-1}\right)^5$.

$$(x^{\frac{3}{2}}y) + (y^{-1})^{5} = {5 \choose 0} (x^{\frac{3}{2}}y)^{5} (y^{-1})^{0} + {5 \choose 1} (x^{\frac{3}{2}}y)^{4} (y^{-1})^{1} +$$

$$+ {5 \choose 2} (x^{\frac{3}{2}}y)^3 (y^{-1})^2 + {5 \choose 3} (x^{\frac{3}{2}}y)^2 (y^{-1})^3 + {5 \choose 4} (x^{\frac{3}{2}}y)^1 (y^{-1})^4 +$$

$$+ {5 \choose 5} (x^{\frac{3}{2}}y)^{0} (y^{-1})^{5} = 1 \cdot x^{\frac{15}{2}}y^{5} \cdot 1 + 5 \cdot x^{6}y^{4} \cdot y^{-1} + 10 \cdot x^{\frac{9}{2}}y^{3} \cdot y^{-2} +$$

$$+ 10 \cdot x^{3}y^{2} \cdot y^{-3} + 5 \cdot x^{\frac{3}{2}}y \cdot y^{-4}$$

$$(x^m)^n = x^{mn}$$

$$(xy)^n = x^n y^n$$

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y+y^{-1}\right)^5$.

$$(x^{\frac{3}{2}}y) + (y^{-1})^{5} = {5 \choose 0} (x^{\frac{3}{2}}y)^{5} (y^{-1})^{0} + {5 \choose 1} (x^{\frac{3}{2}}y)^{4} (y^{-1})^{1} +$$

$$+ {5 \choose 2} (x^{\frac{3}{2}}y)^{3} (y^{-1})^{2} + {5 \choose 3} (x^{\frac{3}{2}}y)^{2} (y^{-1})^{3} + {5 \choose 4} (x^{\frac{3}{2}}y)^{1} (y^{-1})^{4} +$$

$$+ {5 \choose 5} (x^{\frac{3}{2}}y)^{0} (y^{-1})^{5} = 1 \cdot x^{\frac{15}{2}}y^{5} \cdot 1 + 5 \cdot x^{6}y^{4} \cdot y^{-1} + 10 \cdot x^{\frac{9}{2}}y^{3} \cdot y^{-2} +$$

$$+ 10 \cdot x^{3}y^{2} \cdot y^{-3} + 5 \cdot x^{\frac{3}{2}}y \cdot y^{-4} +$$

$$(x^m)^n = x^{mn} \qquad (xy)^n = x^n y^n$$

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y+y^{-1}\right)^5$.

$$(x^{\frac{3}{2}}y) + (y^{-1})^{5} = {5 \choose 0} (x^{\frac{3}{2}}y)^{5} (y^{-1})^{0} + {5 \choose 1} (x^{\frac{3}{2}}y)^{4} (y^{-1})^{1} +$$

$$+ {5 \choose 2} (x^{\frac{3}{2}}y)^3 (y^{-1})^2 + {5 \choose 3} (x^{\frac{3}{2}}y)^2 (y^{-1})^3 + {5 \choose 4} (x^{\frac{3}{2}}y)^1 (y^{-1})^4 +$$

$$+ {5 \choose 5} (x^{\frac{3}{2}}y)^{0} (y^{-1})^{5} = 1 \cdot x^{\frac{15}{2}}y^{5} \cdot 1 + 5 \cdot x^{6}y^{4} \cdot y^{-1} + 10 \cdot x^{\frac{9}{2}}y^{3} \cdot y^{-2} +$$

$$+ 10 \cdot x^{3}y^{2} \cdot y^{-3} + 5 \cdot x^{\frac{3}{2}}y \cdot y^{-4} + 1$$

$$(x^m)^n = x^{mn} \qquad (xy)^n = x^n y^n$$

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y+y^{-1}\right)^5$.

$$(x^{\frac{3}{2}}y) + (y^{-1})^{5} = {5 \choose 0} (x^{\frac{3}{2}}y)^{5} (y^{-1})^{0} + {5 \choose 1} (x^{\frac{3}{2}}y)^{4} (y^{-1})^{1} +$$

$$+ \binom{5}{2} \left(x^{\frac{3}{2}}y\right)^{3} \left(y^{-1}\right)^{2} + \binom{5}{3} \left(x^{\frac{3}{2}}y\right)^{2} \left(y^{-1}\right)^{3} + \binom{5}{4} \left(x^{\frac{3}{2}}y\right)^{1} \left(y^{-1}\right)^{4} +$$

$$+ {5 \choose 5} (x^{\frac{3}{2}}y)^0 (y^{-1})^5 = 1 \cdot x^{\frac{15}{2}}y^5 \cdot 1 + 5 \cdot x^6y^4 \cdot y^{-1} + 10 \cdot x^{\frac{9}{2}}y^3 \cdot y^{-2} +$$

$$+ 10 \cdot x^3y^2 \cdot y^{-3} + 5 \cdot x^{\frac{3}{2}}y \cdot y^{-4} + 1 \cdot 1$$

$$(x^m)^n = x^{mn} \qquad (xy)^n = x^n y^n$$

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y+y^{-1}\right)^5$.

$$(x^{\frac{3}{2}}y) + (y^{-1})^{5} = {5 \choose 0} (x^{\frac{3}{2}}y)^{5} (y^{-1})^{0} + {5 \choose 1} (x^{\frac{3}{2}}y)^{4} (y^{-1})^{1} +$$

$$+ {5 \choose 2} (x^{\frac{3}{2}}y)^{3} (y^{-1})^{2} + {5 \choose 3} (x^{\frac{3}{2}}y)^{2} (y^{-1})^{3} + {5 \choose 4} (x^{\frac{3}{2}}y)^{1} (y^{-1})^{4} +$$

$$+ {5 \choose 5} (x^{\frac{3}{2}}y)^{0} (y^{-1})^{5} = 1 \cdot x^{\frac{15}{2}}y^{5} \cdot 1 + 5 \cdot x^{6}y^{4} \cdot y^{-1} + 10 \cdot x^{\frac{9}{2}}y^{3} \cdot y^{-2} + 10 \cdot x^{3}y^{2} \cdot y^{-3} + 5 \cdot x^{\frac{3}{2}}y \cdot y^{-4} + 1 \cdot 1 \cdot y^{-5}$$

 $\left| \left(x^{m} \right)^{n} = x^{mn} \right| \left| \left(xy \right)^{n} = x^{n} y^{n} \right|$

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y+y^{-1}\right)^5$.

$$(x^{\frac{3}{2}}y) + (y^{-1})^{5} = {5 \choose 0} (x^{\frac{3}{2}}y)^{5} (y^{-1})^{0} + {5 \choose 1} (x^{\frac{3}{2}}y)^{4} (y^{-1})^{1} +$$

$$+ {5 \choose 2} (x^{\frac{3}{2}}y)^3 (y^{-1})^2 + {5 \choose 3} (x^{\frac{3}{2}}y)^2 (y^{-1})^3 + {5 \choose 4} (x^{\frac{3}{2}}y)^1 (y^{-1})^4 +$$

$$+ {5 \choose 5} (x^{\frac{3}{2}}y)^{0} (y^{-1})^{5} = 1 \cdot x^{\frac{15}{2}} y^{5} \cdot 1 + 5 \cdot x^{6} y^{4} \cdot y^{-1} + 10 \cdot x^{\frac{9}{2}} y^{3} \cdot y^{-2} +$$

$$+ 10 \cdot x^{3} y^{2} \cdot y^{-3} + 5 \cdot x^{\frac{3}{2}} y \cdot y^{-4} + 1 \cdot 1 \cdot y^{-5} =$$

$$(x^m)^n = x^{mn} \qquad (xy)^n = x^n y^n$$
is another him and $(x^{\frac{3}{2}} + x^{-1})^5$

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y+y^{-1}\right)^5$.

 $=x^{\frac{15}{2}}v^5$

Rješenje
$$\begin{pmatrix}
a \\
3
\end{pmatrix}
\qquad b$$
5
$$\begin{pmatrix}
5
\end{pmatrix}$$
 $\begin{pmatrix}
5
\end{pmatrix}$
 $\begin{pmatrix}
5
\end{pmatrix}$

$$(x^{\frac{3}{2}}y) + (y^{-1})^{5} = {5 \choose 0} (x^{\frac{3}{2}}y)^{5} (y^{-1})^{0} + {5 \choose 1} (x^{\frac{3}{2}}y)^{4} (y^{-1})^{1} +$$

$$+ \binom{5}{2} (x^{\frac{3}{2}}y)^3 (y^{-1})^2 + \binom{5}{3} (x^{\frac{3}{2}}y)^2 (y^{-1})^3 + \binom{5}{4} (x^{\frac{3}{2}}y)^1 (y^{-1})^4 +$$

$$+ \left(\frac{5}{5}\right) \left(x^{\frac{3}{2}}y\right)^{0} \left(y^{-1}\right)^{5} = 1 \cdot x^{\frac{15}{2}}y^{5} \cdot 1 + 5 \cdot x^{6}y^{4} \cdot y^{-1} + 10 \cdot x^{\frac{9}{2}}y^{3} \cdot y^{-2} +$$

 $+10 \cdot x^{3}y^{2} \cdot y^{-3} + 5 \cdot x^{\frac{3}{2}}y \cdot y^{-4} + 1 \cdot 1 \cdot y^{-5} =$

$$+ {5 \choose 2} (x^{\frac{3}{2}}y)^3 (y^{-1})^2 + {5 \choose 3} (x^{\frac{3}{2}}y)^2 (y^{-1})^3 + {5 \choose 4} (x^{\frac{3}{2}}y)^1 (y^{-1})^4 +$$

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Zadatak 4
$$x^m \cdot x^n = x^{m+n} \qquad (x^m)^n = x^{mn} \qquad (xy)^n = x^n$$
Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y + y^{-1}\right)^5$.

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Rješenje

$$(x^{\frac{3}{2}})$$

$$(x^{\frac{3}{2}}y)+$$

$$\left(x^{\frac{3}{2}}\right)$$

$$\left(x^{\frac{3}{2}}y\right)+\left(y^{\frac{3}{2}}\right)$$

$$(x^{\frac{3}{2}}y) + (y^{-1})$$

$$(x^{\frac{3}{2}}y)+(y^{\frac{3}{2}}y)$$

 $= x^{\frac{15}{2}} y^5 + 5x^6 y^3$

$$(x^{\frac{3}{2}}y) + (y^{-1})^{5} = {5 \choose 0} (x^{\frac{3}{2}}y)^{5} (y^{-1})^{0} + {5 \choose 1} (x^{\frac{3}{2}}y)^{4} (y^{-1})^{1} +$$

 $+ \left({5 \atop 2} \right) \! \left(x^{\frac{3}{2}} y \right)^{3} \! \left(y^{-1} \right)^{2} + \left({5 \atop 3} \right) \! \left(x^{\frac{3}{2}} y \right)^{2} \! \left(y^{-1} \right)^{3} + \left({5 \atop 4} \right) \! \left(x^{\frac{3}{2}} y \right)^{1} \! \left(y^{-1} \right)^{4} + \\$

 $+ \left(\frac{5}{5}\right) \left(x^{\frac{3}{2}}y\right)^{0} \left(y^{-1}\right)^{5} = 1 \cdot x^{\frac{15}{2}}y^{5} \cdot 1 + 5 \cdot x^{6}y^{4} \cdot y^{-1} + 10 \cdot x^{\frac{9}{2}}y^{3} \cdot y^{-2} +$

 $+10 \cdot x^{3}y^{2} \cdot y^{-3} + 5 \cdot x^{\frac{3}{2}}y \cdot y^{-4} + 1 \cdot 1 \cdot y^{-5} =$

$$x^{m} \cdot x^{n} = x^{m+n} \qquad (x^{m})^{n} = x^{mn}$$

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y+y^{-1}\right)^5$.

Rješenje

$$\left(\underbrace{x^{\frac{3}{2}}y}\right) + \underbrace{y^{-1}}\right)^{5} = \binom{5}{0}(x)$$

$$+ \left(\begin{matrix} 5 \\ 2 \end{matrix}\right) \! \left(x^{\frac{3}{2}} y\right)^{3} \! \left(y^{-1}\right)^{2} + \left(\begin{matrix} 5 \\ 3 \end{matrix}\right) \! \left(x^{\frac{3}{2}} y\right)^{2} \! \left(y^{-1}\right)^{3} + \left(\begin{matrix} 5 \\ 4 \end{matrix}\right) \! \left(x^{\frac{3}{2}} y\right)^{1} \! \left(y^{-1}\right)^{4} + \\$$

$$+ {5 \choose 2} (x^{\frac{3}{2}}y)^3 (y^{-1})^2 + {5 \choose 3} (x^{\frac{3}{2}}y)^3 (y^{-1})^3 (y^{-1})^3$$

$$(y^{-1})^2 + {5 \choose 2} (x^{\frac{3}{2}}y)$$

$$\frac{1}{1} \left(\frac{1}{1} \right)^{2}$$

$$\binom{5}{4}$$
 $\left(x^{\frac{3}{2}}\right)$

$$y)^{1}(y^{-1})$$

$$+\binom{5}{2}(x^{\frac{3}{2}}y)^3(y^{-1})^2+\binom{5}{3}(x^{\frac{3}{2}}y)^3(y^{-1})^2$$

$$(y^{-1})^3 + (4)^{(x^{\frac{5}{2}})}$$

$$e^{-1} + 10$$

$$)^{1}(y^{-1})^{4} +$$

$$+ {5 \choose 5} (x^{\frac{3}{2}}y)^{0} (y^{-1})^{5} = 1 \cdot x^{\frac{15}{2}}y^{5} \cdot 1 + 5 \cdot x^{6}y^{4} \cdot y^{-1} + 10 \cdot x^{\frac{9}{2}}y^{3} \cdot y^{-2} +$$

$$\cdot x^{\frac{9}{2}}y^3 \cdot y^-$$

$$y)^1$$

$$+ 10 \cdot x^{3}y^{2} \cdot y^{-3} + 5 \cdot x^{\frac{3}{2}}y \cdot y^{-4} + 1 \cdot 1 \cdot y^{-5} =$$

 $=x^{\frac{15}{2}}y^5+5x^6y^3+10x^{\frac{9}{2}}y$

$$x^{m} \cdot x^{n} = x^{m+n}$$

$$(x^{m})^{n} = x^{mn}$$
g teorema raspišite i sredite binom

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y+y^{-1}\right)^5$.

Rješenje

$$(x_{2}^{\frac{3}{2}}v)+(v^{-1})^{5}=(5)(x_{2}^{\frac{3}{2}}v)$$

$$(x^{\frac{3}{2}}y) + (y^{-1})^{5} = {5 \choose 0} (x^{\frac{3}{2}}y)^{5} (y^{-1})^{0} + {5 \choose 1} (x^{\frac{3}{2}}y)^{4} (y^{-1})^{1} +$$

$$(-1)^2 + {5 \choose 2} (x^{\frac{3}{2}})$$

$$+ \left(\frac{5}{2}\right) \left(x^{\frac{3}{2}}y\right)^{3} \left(y^{-1}\right)^{2} + \left(\frac{5}{3}\right) \left(x^{\frac{3}{2}}y\right)^{2} \left(y^{-1}\right)^{3} + \left(\frac{5}{4}\right) \left(x^{\frac{3}{2}}y\right)^{1} \left(y^{-1}\right)^{4} + \\$$

 $=x^{\frac{15}{2}}y^5+5x^6y^3+10x^{\frac{9}{2}}y+10x^3y^{-1}$

$$(v^{-1})^2 + {5 \choose 1} (x^{\frac{3}{2}}v)$$

$$(y^{-1})^3 + {5 \choose 4}$$

$$\binom{5}{4}$$
 (4

$$\left(x^{\frac{3}{2}}y\right)^1\left(y\right)$$

$$+ \left(2\right)^{(x^{2}y)} (y^{-}) + \left(3\right)^{(x^{2}y)} (y^{-}) + \left(4\right)^{(x^{2}y)} (y^{-}) + \left(4\right)^{(x^{2}y)}$$

 $+10 \cdot x^{3}y^{2} \cdot y^{-3} + 5 \cdot x^{\frac{3}{2}}y \cdot y^{-4} + 1 \cdot 1 \cdot y^{-5} =$

$$(4)^{-1}$$

$$\left(y^{-1}\right)^3 + \left(\frac{1}{2}\right)^3 + \left(\frac{1}{2}\right)^3$$

$$\binom{5}{4}$$
 (x)

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$$x^{m} \cdot x^{n} = x^{m+n} \qquad (x^{m})^{n} = x^{mn}$$
g teorema raspišite i sredite binom (x

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y+y^{-1}\right)^5$.

Rješenje

$$(x^{\frac{3}{2}}y) + (y^{-1})^{5} = {5 \choose 0}(x^{\frac{3}{2}}y)^{5}(y^{-1})^{0} + {5 \choose 1}(x^{\frac{3}{2}}y)^{4}(y^{-1})^{1} +$$

$$(x^2y) + (y^2) = \begin{pmatrix} 0 \end{pmatrix} (x^2y)$$

$$(5) \begin{pmatrix} 3 & 3 & 1 \\ 2 & 6 \end{pmatrix} (5) \begin{pmatrix} 3 & 3 \\ 3 & 6 \end{pmatrix}$$

$$(y^{-1})^2 + {5 \choose 2} (x^{\frac{3}{2}}y)^2$$

$$+ \binom{5}{2} \big(x^{\frac{3}{2}}y\big)^3 \big(y^{-1}\big)^2 + \binom{5}{3} \big(x^{\frac{3}{2}}y\big)^2 \big(y^{-1}\big)^3 + \binom{5}{4} \big(x^{\frac{3}{2}}y\big)^1 \big(y^{-1}\big)^4 + \\$$

$$(x^{-1})^2 + {5 \choose 3} (x^{\frac{3}{2}}y)$$

$$(y^{-1})^3$$

$$\binom{5}{4}$$
 (x)

$$(y)^{1}(y^{-1})$$

$$(y^{-1})^4 +$$

$$+ {5 \choose 5} (x^{\frac{3}{2}}y)^{0} (y^{-1})^{5} = 1 \cdot x^{\frac{15}{2}} y^{5} \cdot 1 + 5 \cdot x^{6} y^{4} \cdot y^{-1} + 10 \cdot x^{\frac{9}{2}} y^{3} \cdot y^{-2} +$$

$$0 = \frac{9}{3} \cdot .3 = ...$$

$$0 \cdot x^{\frac{9}{2}}y^3 \cdot y^3$$

$$10 \cdot x^{\frac{9}{2}} v^3$$

 $+ 10 \cdot x^{3}y^{2} \cdot y^{-3} + 5 \cdot x^{\frac{3}{2}}y \cdot y^{-4} + 1 \cdot 1 \cdot y^{-5} =$

$$x^{m} \cdot x^{n} = x^{m+n} \qquad (x^{m})^{n} = x^{mn}$$
g teorema raspišite i sredite binom (x

Pomoću binomnog teorema raspišite i sredite binom $\left(x^{\frac{3}{2}}y+y^{-1}\right)^5$.

$$+ {5 \choose 2} (x^{\frac{3}{2}}y)^3 (y^{-1})^2 + {5 \choose 3} (x^{\frac{3}{2}}y)^2 (y^{-1})^3 + {5 \choose 4} (x^{\frac{3}{2}}y)^1 (y^{-1})^4 +$$

$$(0)^{2}$$

$$(x^{-1})^2 + {5 \choose 3} \left(x^{\frac{3}{2}}y\right)$$

 $+ 10 \cdot x^{3}y^{2} \cdot y^{-3} + 5 \cdot x^{\frac{3}{2}}y \cdot y^{-4} + 1 \cdot 1 \cdot y^{-5} =$

 $= x^{\frac{15}{2}}y^5 + 5x^6y^3 + 10x^{\frac{9}{2}}y + 10x^3y^{-1} + 5x^{\frac{3}{2}}y^{-3} + y^{-5}$

$$(x^{-1})^2 + {5 \choose 3} (x^{\frac{3}{2}}y)$$

$$\int_{-\infty}^{\infty} \left(1\right)^{(\chi^2)}$$

$$+\binom{5}{4}\left(x^{\frac{3}{2}}\right)$$

$$(y^{-1})^{1}$$

$$+ {1 \choose 2} (x^{\frac{1}{2}}y)^{3} (y^{-1})^{2} + {3 \choose 3} (x^{\frac{1}{2}}y)^{2} (y^{-1})^{3} + {4 \choose 4} (x^{\frac{1}{2}}y)^{2} (y^{-1})^{3} +$$

$$+ {5 \choose 5} (x^{\frac{3}{2}}y)^{0} (y^{-1})^{5} = 1 \cdot x^{\frac{15}{2}}y^{5} \cdot 1 + 5 \cdot x^{6}y^{4} \cdot y^{-1} + 10 \cdot x^{\frac{9}{2}}y^{3} \cdot y^{-2} +$$

$$y\big)^1\big(y^{-1}\big)^4$$

$$(y^{-1})^4$$

peti zadatak

Neka je P(n) tvrdnja koja ovisi o $n \in \mathbb{N}$.

• P(1) je istinita tvrdnja.

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Zaključak

P(n) je tvrdnja koja vrijedi za sve prirodne brojeve.

Dokažite matematičkom indukcijom da za svaki $n \in \mathbb{N}$ vrijedi

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pretpostavka indukcije

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