

Seřadění

SLOŽENÁ

HIRANATÁ

KULATÁ

ZÁVORKA

$$\begin{aligned}
 & 0,6ab^2 + \left\{ 2a^3 + b^3 - [3ab^2 - (a^3 + 2,4b^2a + b^2)] \right\} = \\
 & = 0,6ab^2 + \left\{ 2a^3 + b^3 - [3ab^2 - a^3 - 2,4b^2a - b^2] \right\} = \\
 & = 0,6ab^2 + \left\{ 2a^3 + b^3 - 3ab^2 + a^3 + 2,4b^2a + b^2 \right\} = \\
 & = \underline{0,6ab^2} + 2a^3 + b^3 - \underline{3ab^2} + a^3 + \underline{2,4b^2a} + b^2 = \\
 & = 2a^3 + a^3 + b^3 + b^2 = \\
 & = \underline{\underline{3a^3 + b^3 + b^2}}
 \end{aligned}$$

Vynásobení

$$\begin{aligned}
 & 7x^2y * 2a(-2 \cdot xy^2) = \\
 & = 7x^2y * 2a(-2xy^2) = \\
 & = 7x^2y * (-4axy^2) = \\
 & = \underline{\underline{-28x^3y^3a}}
 \end{aligned}$$

Rozložte:

$$15x^3y^2 + 10x^2y - 20x^2y^3 =$$

$$\underline{\underline{5x^2y(3xy + 2 - 4y^2)}}$$

(VRTÝKÁNÍ)

$$\begin{aligned} & 15RU - 6US - 5RV + 2SV = \\ = & 15RU - 5RV - 6US + 2SV = \\ = & 5R(3U - V) - 2S(3U - V) = \\ = & \underline{\underline{(3U - V)(5R - 2S)}} \end{aligned}$$

Opakování vzorců

$$\begin{aligned} (2xy - 1) \cdot (2xy + 1) &= 4x^2y^2 + 2xy - 2xy - 1 = \\ &= \underline{\underline{4x^2y^2 - 1}} \quad (A-B)(A+B) = A^2 - B^2 \end{aligned}$$

$$\begin{aligned} (x + 10)^2 &= (x + 10)(x + 10) = x^2 + 10x + 10x + 100 = \\ (A+B)^2 &= A^2 + 2AB + B^2 \quad = \underline{\underline{x^2 + 20x + 100}} \end{aligned}$$

$$\begin{aligned} (3 - 5n)^2 &= (3 - 5n)(3 - 5n) = 9 - 15n - 15n + 25n^2 = \\ (A-B)^2 &= A^2 - 2AB + B^2 \quad = \underline{\underline{9 - 30n + 25n^2}} \end{aligned}$$

$$A^2 - 2AB + B^2 = (A - B)^2$$
$$9 - 12x + 4x^2 = \underline{\underline{(3 - 2x)^2}}$$

Posn:

$$3^2 + [2 \cdot 3 \cdot (-2x)] + (-2x)^2$$

$$81a^2b^2 - 1 = (9ab)^2 - (1)^2 =$$
$$= \underline{\underline{(9ab - 1)(9ab + 1)}}$$

$$0,04a^2 + 0,16ab + 0,16b^2 = \underline{\underline{(0,2a + 0,4b)^2}}$$

## SEÇTËTE

$$\textcircled{1} a^2 - b^2 - \{3ab - 2b^2 - [a^2 + 2ab - (b^2 - ab)]\}$$

$$\textcircled{2} 2a - [2a + b - (3a - 2b) - (a - b)]$$

$$\begin{aligned} \textcircled{1} a^2 - b^2 - \{3ab - 2b^2 - [a^2 + 2ab - (b^2 - ab)]\} &= \\ &= a^2 - b^2 - \{3ab - 2b^2 - [a^2 + 2ab - b^2 + ab]\} = \\ &= a^2 - b^2 - [3ab - 2b^2 - (a^2 + 2ab - b^2 + ab)] = \\ &= a^2 - b^2 - (3ab - 2b^2 - a^2 - 2ab + b^2 - ab) = \\ &= a^2 - b^2 - 3ab + 2b^2 + a^2 + 2ab - b^2 + ab = \\ &= a^2 - 3ab + a^2 + 2ab + ab = \\ &= a^2 + a^2 = \\ &= \underline{\underline{2a^2}} \end{aligned}$$

$$\begin{aligned} \textcircled{2} 2a - [2a + b - (3a - 2b) - (a - b)] &= \\ &= 2a - (2a + b - 3a + 2b - a + b) = \\ &= \underline{2a} - \underline{2a} - b + \underline{3a} - \underline{2b} + \underline{a} - b = \\ &= \underline{\underline{4a}} - \underline{\underline{4b}} \end{aligned}$$

# VYNAŠOBTE

$$\textcircled{1} 10a \cdot bc^2 \cdot 2ab^2 \cdot 3ac^3$$

$$\textcircled{2} 2m(-3n)(-mn)$$

$$\textcircled{3} ay(2a-y) - \{a^3 - [y^2(a-3y) - a^2(a+2y)]\}$$

$$\textcircled{4} ab(a+b) - a\{b(3b-2a) - [a^2 - b(3a-2b)]\}$$

$$\textcircled{5} (a^4 + 5a^3 + 4a^2 - 3a + 1)(a^2 + 2a + 1)$$

$$\textcircled{6} (x-a)(x-b)(x-c)$$

$$\textcircled{1} 10a \cdot bc^2 \cdot 2ab^2 \cdot 3ac^3 =$$

$$= \underline{\underline{60a^3b^3c^5}}$$

$$\textcircled{2} 2m(-3n)(-mn) = (-6mn)(-mn) = \underline{\underline{6m^2n^2}}$$

$$\textcircled{3} ay(2a-y) - \{a^3 - [y^2(a-3y) - a^2(a+2y)]\} =$$

$$= 2a^2y - ay^2 - \{a^3 - [y^2a - 3y^3 - a^3 - 2a^2y]\} =$$

$$= 2a^2y - ay^2 - \{a^3 - y^2a + 3y^3 + a^3 + 2a^2y\} =$$

$$= \underline{\underline{2a^2y - ay^2 - a^3 + y^2a - 3y^3 - a^3 - 2a^2y}} =$$

$$= \underline{\underline{-3y^3 - 2a^3}}$$



$$\begin{aligned}
(4) \quad & ab(a+b) - a \{ b(3b-2a) - [a^2 - b(3a-2b)] \} = \\
& = a^2b + ab^2 - a \{ 3b^2 - 2ab - [a^2 - 3ab + 2b^2] \} = \\
& = a^2b + ab^2 - a \{ 3b^2 - 2ab - a^2 + 3ab - 2b^2 \} = \\
& = \underline{a^2b} + ab^2 - 3ab^2 + \underline{2a^2b} + a^3 - \underline{3a^2b} + 2ab^2 = \\
& = \underline{a^3}
\end{aligned}$$

$$\begin{aligned}
(5) \quad & (a^4 + 5a^3 + 4a^2 - 3a + 1)(a^2 + 2a + 1) = \\
& = a^6 + 2a^5 + a^4 + 5a^5 + 10a^4 + 5a^3 + a^4 + 8a^3 + 4a^2 - 3a^3 - 6a^2 - 3a + \\
& + a^2 + 2a + 1 = \\
& = \underline{a^6 + 7a^5 + 15a^4 + 10a^3 - a^2 - a + 1}
\end{aligned}$$

$$\begin{aligned}
(6) \quad & (x-a)(x-b)(x-c) = \\
& = (x^2 - xb - ax + ab)(x-c) = \\
& = (\underline{x^3} - \underline{x^2b} - \underline{ax^2} + abx - \underline{x^2c} + \underline{xbc} + \underline{axc} - abc) = \\
& = \underline{x^3 - cx^2 - bx^2 - ax^2 + bcx + acx + abx - abc}
\end{aligned}$$

# VYDĚLTE

$$\textcircled{1} (x^2 + 8x + 15) : (x + 3) =$$

$$\textcircled{2} (-10x^2 + 4x + 4x^3 - 40) : (x - 3)$$

$$\textcircled{1} (x^2 + 8x + 15) : (x + 3) = x + 5$$

$$\begin{array}{r} \nearrow \text{VŽDY ODEČÍTÁN} \quad \downarrow \text{OPÍŠI} \\ -(x^2 + 3x) \\ \hline 5x + 15 \\ -(5x + 15) \\ \hline 0 \end{array}$$

$$\textcircled{2} (-10x^2 + 4x + 4x^3 - 40) : (x - 3) \quad \text{1. SEŘAĎ POLYNOMY!}$$

$$(4x^3 - 10x^2 + 4x - 40) : (x - 3) = \underline{4x^2 + 2x + 10} - \frac{10}{x-3}$$

$$\begin{array}{r} -(4x^3 - 12x^2) \\ \hline 2x^2 + 4x \\ -(2x^2 - 6x) \\ \hline 10x - 40 \\ -(10x - 30) \\ \hline -10 \end{array}$$

NAPIŠTE JAKO DRUHOU MOCNINU DVOJČLENU  
VÝRAZU

$$\textcircled{1} 4a^2 + 4ab + b^2$$

$$\textcircled{2} m^2 - 6mn + 9n^2$$

$$\textcircled{1} 4a^2 + 4ab + b^2 = \underline{\underline{(2a + b)^2}}$$

$$\textcircled{2} m^2 - 6mn + 9n^2 = \underline{\underline{(m - 3n)^2}}$$

ROZLOŽTE:

$$\textcircled{1} 1 - x^4$$

$$\textcircled{2} -3m^4n^2 - 6m^3n^3 + 9m^2n^4$$

$$\textcircled{1} 1 - x^4 = 1^4 - x^4 =$$

$$= \underline{\underline{(1^2)^2 - (x^2)^2}} =$$

$$= \underline{\underline{(1^2 - x^2)(1^2 + x^2)}} =$$

$$= \underline{\underline{(1 - x)(1 + x)(1 + x^2)}}$$

VZOREC

$$\boxed{(A - B)(A + B) = A^2 - B^2}$$

APLIKUJI

VZOREC 2\*

$$\textcircled{2} -3m^4n^2 - 6m^3n^3 + 9m^2n^4 = \underline{\underline{-3m^2n^2(m^2 + 2mn - 3n^2)}}$$



NAPIŠTE ČEMU SE ROVNAJÍ VÝRAZY

$$\textcircled{1} (A+B)^3$$

$$\textcircled{2} (A-B)^3$$

$$\textcircled{1} (A+B)^3 = A^3 + 3A^2B + 3AB^2 + B^3$$

$$\textcircled{2} (A-B)^3 = A^3 - 3A^2B + 3AB^2 - B^3$$