

VÝKAZY

① a) $[38 + (-29)] \cdot [38 - (-29)] = 9 \cdot 67 = \underline{603}$

b) $7\frac{1}{2} : 2\frac{7}{11} - (-7\frac{1}{2}) \cdot (-2\frac{7}{11}) = \frac{15}{2} : \frac{34}{11} - \frac{15}{2} \cdot \frac{34}{11} = \frac{15}{2} \cdot \frac{11}{34} - \frac{1}{1} \cdot \frac{15}{1} = \frac{225}{68} - 15 =$
 $= 3\frac{21}{68} - 15 = -13\frac{68-21}{68} = -13\frac{47}{68}$

c) $27 \cdot \frac{5}{18} - \frac{10}{24} \cdot \frac{18}{5} = \frac{27}{10} \cdot \frac{5}{18} - \frac{2}{3} \cdot \frac{2}{1} = \frac{3}{2} \cdot \frac{1}{2} - \frac{4}{3} = \frac{3}{4} - \frac{4}{3} = \frac{9-16}{12} = -\frac{7}{12}$

2. a) $(2x \cdot 5y) + 3[-x - (-5y)] = 10xy + 3(-x + 5y) = 10xy - 3x + 15y$

b) $\frac{(m+n)^2}{(\frac{1}{m})^2 - (\frac{1}{n})^2}$

③

1. m	1 h	s m	(t-2) hodin	$(t-2) \cdot s + (s-15) \cdot t$
2. m	1 h	(s-15) m	t hodin	

$= st - 2s + st - 15t = \underline{2st - 2s - 15t}$

④ $4k^2 - (4k^2 + 4k + 1) - 4k - 8 = 4k^2 - 4k^2 - 4k - 1 - 4k - 8 = \underline{-8k - 9}$

$k = -3$

$4 \cdot 9 - [2 \cdot (-3) + 1]^2 - 4(-3 + 2) = 36 - [-6 + 1]^2 + 4 = 36 - 25 + 4 = \underline{15}$

$-8 \cdot (-3) - 9 = 24 - 9 = \underline{15}$

⑤ $3(4c - 2d + 1) - 2(7c + d - 5) = 12c - 6d + 3 - 14c - 2d + 10 = \underline{-2c - 8d + 13}$

⑥ $(5m - 20 + \frac{2}{3}) + 0 = (7,4m + 30 - \frac{1}{2})$

$\Rightarrow (7,4m + 30 - \frac{1}{2}) - (5m - 20 + \frac{2}{3}) = 7,4m + 30 - \frac{1}{2} - 5m + 20 - \frac{2}{3} = 2,4m + 50$

$- \frac{3+4}{6} = \underline{2,4m + 50 - \frac{7}{6}}$

⑦ $(\frac{2}{5}k^2 - 2k + 0,6) - 0 = (0,3k^2 + 0,5k - 6,3)$

$\Rightarrow \frac{2}{5}k^2 - 2k + 0,6 - 0,3k^2 - 0,5k + 6,3 = \underline{\frac{1}{10}k^2 - 2,5k + 6,9}$

$$\begin{aligned} (8) &= 12ab - 15a - 28b + 35 - (12ab + 54a - 2b - 9) - a + 26b = \\ &= \underline{12ab} - 15a - 28b + 35 - \underline{12ab} - 54a + 2b + 9 - a + 26b = \underline{-70a + 44} \end{aligned}$$

$$(9) \text{ a) } 4x^2 + 28x + 49$$

$$\text{c) } 81a^6 - 126a^3b^2 + 49b^4$$

$$\text{b) } 16x^6 - 16x^3y^4 + 4y^8$$

$$\text{d) } \frac{1}{64}a^8 + \frac{1}{2} \cdot \frac{2}{5} \cdot 2a^2b^5 + \frac{4}{25}b^{10} = \underline{\underline{\frac{1}{64}a^8 + \frac{1}{10}a^2b^5 + \frac{4}{25}b^{10}}}}$$

$$(10) \text{ a) } \underline{9m^2 + 6m + 1} - \underline{4m^2 - 4m - 1} - \underline{m^2 + 1} = 4m^2 + 2m + 1$$

$$\text{b) } \frac{8x - 20x - 5x}{20} = \underline{\underline{\frac{-17x}{20}}}$$

$$(11) \text{ a) } 3xy(6x - 4y)$$

$$\text{b) } 7r(5r - 3r) - (5r - 3r) = (5r - 3r)(7r - 1)$$

$$\text{c) } 16a^2b(4 - b) = 16a^2b(2 - b)(2 + b)$$

$$\text{d) } 3(a + b) + x(a + b) = (a + b)(3 + x)$$

$$\text{e) } (2x - y)^2$$

$$\text{f) } (4m - 5 - 3)(4m - 5 + 3) = (4m - 8)(4m - 2)$$

$$(12) = \left(\frac{1 - 1 + a}{1 - a} \right) : \frac{2a^2 - a(1 - a)}{1 - a} = \frac{a}{(1 - a)} \cdot \frac{(1 - a)}{3a^2 - a} = \frac{a}{a(3a - 1)} = \frac{1}{3a - 1} \quad \begin{matrix} a \neq 0 \\ a \neq 1 \\ a \neq \frac{1}{3} \end{matrix}$$

$$a = -1$$

$$\left(\frac{1}{1 - (-1)} - 1 \right) : \left(\frac{2 \cdot 1}{1 - (-1)} - (-1) \right) = \left(\frac{1}{2} - 1 \right) : \left(\frac{2}{2} + 1 \right) = -\frac{1}{2} : 2 = -\frac{1}{2} \cdot \frac{1}{2} = \underline{\underline{-\frac{1}{4}}}$$

$$\frac{1}{3(-1) - 1} = \frac{1}{-4} = \underline{\underline{-\frac{1}{4}}}$$

$$(13) \text{ a) } \left(\frac{1}{b-1} + \frac{b-1}{b-1} \right) : \left(\frac{1-b^2}{1-b^2} - \frac{3b^2}{1-b^2} \right) = \frac{2b-1}{1-1} : \frac{1-4b^2}{1-b^2} =$$

$$= \frac{(2b-1)}{(b-1)} \cdot \frac{(b-1)(1+b)}{(1-2b)(1+2b)} = \frac{1+b}{1+2b} \quad \begin{matrix} b \neq \pm 1 \\ b \neq \pm \frac{1}{2} \end{matrix}$$

$$b) = \frac{\frac{x+1}{1-x}}{\frac{x-1-x}{x-1}} = \frac{\frac{x+1}{1-x}}{\frac{-1}{x-1}} = \frac{\overset{-1}{(x-1)}(x+1)}{(1-x) \cdot (-1)} = \underline{\underline{x+1}}; \quad x \neq 1$$

$$c) = \frac{(3-x)^2}{3(y-4)} \cdot \frac{(y-4)}{\underset{-1}{(x-3)}(x+3)} = \frac{3-x}{(-1)(x+3)} = \frac{x-3}{3(x+3)}; \quad \begin{array}{l} x \neq \pm 3 \\ y \neq 4 \end{array}$$

$$d) = \frac{(x-y)(x+y)}{3x^2y^2} \cdot \frac{\cancel{xy}}{(y+2xy-2xy+x)} = \frac{x-y}{\cancel{3xy}}; \quad \begin{array}{l} x \neq 0 \\ y \neq 0 \\ y \neq -x \end{array}$$

$$e) = \frac{\frac{(r+s)^2 - (r-s)^2 - 4s^2}{r^2 - s^2}}{\frac{r+s-r}{r+s}} = \frac{\frac{r^2 + 2rs + s^2 - r^2 + 2rs - s^2 - 4s^2}{r^2 - s^2}}{\frac{s}{r+s}} =$$

$$= \frac{\frac{4rs - 4s^2}{r^2 - s^2}}{\frac{s}{r+s}} = \frac{4s(r-s) \cdot (r+s)}{(r+s)(r-s) \cdot s} = \underline{\underline{4}} \quad \begin{array}{l} s \neq 0 \\ r \neq \pm s \end{array}$$