

ZWISCHEN

$$(1) \quad 2 + \frac{1}{2} + 3\frac{1}{4} = \frac{2}{1} + \frac{1}{2} + \frac{13}{4} = \frac{8+2+13}{4} = \frac{23}{4} = \underline{\underline{5\frac{3}{4}}}$$

$$(2) \quad \frac{3}{10} - \left(-\frac{1}{15}\right) = \frac{3}{10} + \frac{1}{15} = \frac{9+2}{30} = \underline{\underline{\frac{11}{30}}}$$

$$(3) \quad \frac{2}{9} + \left(\frac{7}{12} - 1\frac{1}{4}\right) = \frac{2}{9} + \frac{7}{12} - \frac{5}{4} = \frac{8+21-45}{36} = -\frac{16}{36} = \underline{\underline{-\frac{4}{9}}}$$

$$(4) \quad \left(-\frac{33}{5}\right) \cdot \left(-\frac{10}{11}\right) = \frac{3}{1} \cdot \frac{2}{1} = \underline{\underline{6}}$$

$$(5) \quad \frac{7}{12} : \left(-\frac{49}{12}\right) = -\frac{7}{12} \cdot \frac{12}{49} = -\frac{1}{1} \cdot \frac{1}{7} = \underline{\underline{-\frac{1}{7}}}$$

$$(6) \quad \left(\frac{1}{2} - \frac{1}{3}\right) \cdot \frac{3}{8} = \frac{3-2}{6} \cdot \frac{3}{8} = \frac{1}{6} \cdot \frac{3}{8} = \frac{3}{48} = \underline{\underline{\frac{1}{16}}}$$

$$(7) \quad -\frac{18}{5} \cdot \frac{15}{12} + \frac{1}{4} \cdot \left(-\frac{3}{2}\right) = -\frac{3}{1} \cdot \frac{3}{2} + \left(-\frac{3}{8}\right) = -\frac{9}{2} - \frac{3}{8} = \frac{-36-3}{8} = \frac{-39}{8} = \underline{\underline{-4\frac{7}{8}}}$$

$$(8) \quad -2,4 \cdot 1\frac{1}{24} - 7\frac{1}{4} : 3\frac{5}{8} = -\frac{24}{10} \cdot \frac{25}{24} - \frac{29}{4} : \frac{29}{8} = -\frac{1}{2} \cdot \frac{5}{1} - \frac{29}{4} \cdot \frac{8}{29} = -\frac{5}{2} - \frac{8}{4} = \frac{-10-8}{4} = -\frac{18}{4} = -\frac{9}{2} = \underline{\underline{-4\frac{1}{2}}}$$

$$(9) \quad \frac{\frac{1}{7} + \frac{4}{9}}{\frac{2}{9} + \frac{3}{5}} = \frac{\frac{9+28}{63}}{\frac{10+27}{45}} = \frac{\frac{37}{63}}{\frac{37}{45}} = \frac{37 \cdot 45}{63 \cdot 37} = \frac{45}{63} = \underline{\underline{\frac{5}{7}}}$$

VÝRAZ

$$\textcircled{1} \quad 4 - (x-1) + (x+2) - 5x - 9 + (3x-4) = \underbrace{4-x+1+x+2-5x-9+3x-4} = \underline{\underline{-2x-6}}$$

$$\textcircled{2} \quad 7x - [(3y+2x) - (4x-5y)] - (-8y) = \cancel{7x} - [3y+2x-4x+5y] + 8y = 7x - 3y + 2x - 4x + 5y + 8y = \underline{\underline{5x+10y}}$$

$$\textcircled{3} \quad (y-1)(y-2)(y+1) = (y^2 - 2y - y + 2)(y+1) = (y^2 - 3y + 2)(y+1) = y^3 + y^2 - 3y^2 - 3y + 2y + 2 = \underline{\underline{y^3 - 2y^2 - y + 2}}$$

$$\textcircled{4} \quad 7x^2y + 14xy^2 - 7x^2y^2 = \underline{\underline{7xy(x + 2y - xy)}}$$

$$\textcircled{5} \quad 4x^2 - 16y^2 = (2x)^2 - (4y)^2 = \underline{\underline{(2x-4y)(2x+4y)}}$$

Rozložte
na součin

$$\textcircled{6} \quad \frac{x^2 - 7x}{3x - 21} = \frac{x(x-7)}{3(x-7)} = \underline{\underline{\frac{x}{3}}}$$

podmínka $\left\{ \begin{array}{l} x-7 \neq 0 \\ x \neq 7 \end{array} \right.$

$$\textcircled{7} \quad \left(\frac{4x-1}{2xy} - \frac{2x}{y} \right) \cdot (-2xy) = \frac{(4x-1) - 2x \cdot 2x}{2xy} \cdot \cancel{(-2xy)} = -[4x-1-4x^2] = \underline{\underline{4x^2-4x+1}}$$

MOCHINY

$$\textcircled{1} \quad 2^2 \cdot 2^4 = 2^{2+4} = \underline{\underline{2^6}}$$

$$\textcircled{2} \quad (2^2)^4 = 2^{2 \cdot 4} = \underline{\underline{2^8}}$$

$$\textcircled{3} \quad \frac{2^4}{2^2} = 2^{4-2} = \underline{\underline{2^2}}$$

$$\textcircled{4} \quad \left(\frac{5}{6}\right)^5 \cdot \left(\frac{5}{6}\right)^{-6} = \left(\frac{5}{6}\right)^{5+(-6)} = \left(\frac{5}{6}\right)^{-1} = \underline{\underline{\frac{6}{5}}}$$

$$\textcircled{5} \quad \left(\frac{x^0 \cdot z^{-3}}{y^{-3}}\right)^{-4} = \left(\frac{1 \cdot y^3}{z^3}\right)^{-4} = \left(\frac{z^3}{y^3}\right)^4 = \underline{\underline{\left(\frac{z}{y}\right)^{12}}}$$

$$\textcircled{6} \quad 2^3 \cdot 4^2 = 2^3 \cdot (2^2)^2 = 2^3 \cdot 2^4 = \underline{\underline{2^7}}$$

$$\textcircled{7} \quad \frac{4^{-2} \cdot 2^3 \cdot 5^{-1}}{10^{-2} \cdot 3^3} = \frac{(2^2)^{-2} \cdot 2^3 \cdot 5^{-1}}{(2 \cdot 5)^{-2} \cdot 3^3} = \frac{2^{-2} \cdot 2^3 \cdot 5^{-1}}{2^{-2} \cdot 3^3 \cdot 5^{-2}} = \frac{2^3 \cdot 5^2}{3^3 \cdot 5^1} = \underline{\underline{\frac{2^3 \cdot 5}{3^3}}}$$

korice:

$$a^x \cdot a^y = a^{x+y}$$

$$(a^x)^y = a^{x \cdot y}$$

$$\frac{a^x}{a^y} = a^{x-y}$$

$$a^{-1} = \frac{1}{a}$$

$$(a \cdot b)^n = a^n \cdot b^n$$

$$\left(\frac{a}{b}\right)^n = \frac{a^n}{b^n}$$

$$\text{Dh.} \quad [(-2a)^{-2}]^{-3} =$$

$$\left(\frac{2x}{3a}\right)^{-3} \cdot \left(\frac{9a}{x}\right)^{-2} =$$

$$\left(\frac{a^{-3} \cdot b^{-2}}{a^{-4} \cdot b^6}\right)^{-3} =$$