

6. DÚ z MF pro 7. ročník
Termin odevzdání: středa 17. 10. 2018

Řeš rovnice a proved' zkoušku:

$$7x + 9 + 1 = 6x - 10 - 2x$$

$$9x - 7 = 6x + 14 + 6$$

$$6c + 30 + 2c = 5c - 4 - 1$$

$$8x - 15x - 2 = 40 - 2x$$

$$4 + 3x + 2x = 12 + 4x - 5$$

$$40 - 45x = 90 - 35x$$

$$5 - 21 - (x - 7) = 2x + 16$$

$$5x - (4 + 2x) + 1 = 8x + 2$$

$$2x - (x + 2) = 6x - (x - 6)$$

$$6 - (2x - 2) = 0$$

$$-(4 - 3x) - x = 2x - (10 - 6x)$$

1. Doplň:

Základní jednotka hmotnosti je gram, značíme ji g

Seřaď jednotky hmotnosti od nejmenší po největší mg, cg, dg, g, dag, kg, t, q

2. Převeď:

$$1 \text{ kg} = \underline{1000} \text{ g}$$

$$78 \text{ t} = \underline{78000} \text{ kg}$$

$$75000 \text{ kg} = \underline{75} \text{ t}$$

$$1 \text{ t} = \underline{1000} \text{ kg}$$

$$5680 \text{ kg} = \underline{5,68} \text{ t}$$

$$1540 \text{ g} = \underline{1,54} \text{ kg}$$

$$5000 \text{ g} = \underline{5} \text{ kg}$$

$$825 \text{ kg} = \underline{825000} \text{ g}$$

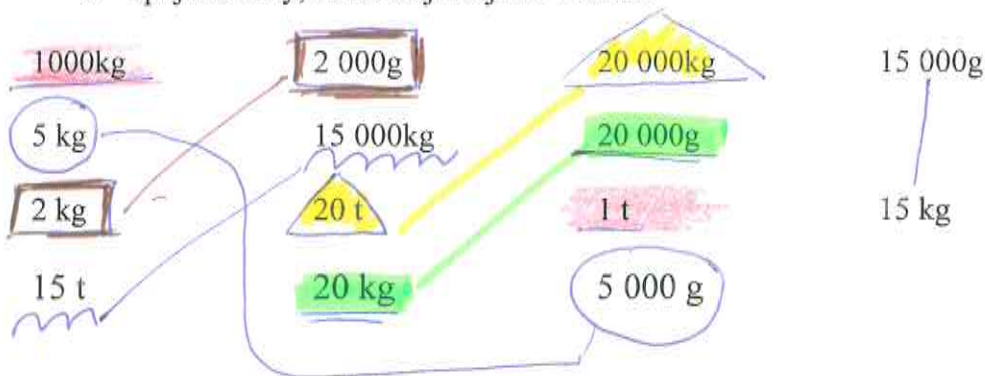
$$15 \text{ kg} = \underline{15000} \text{ g}$$

$$6280 \text{ g} = \underline{6,28} \text{ kg}$$

$$12230 \text{ g} = \underline{12,23} \text{ kg}$$

$$77345 \text{ kg} = \underline{77,345} \text{ t}$$

3. Spoj hodnoty, které mají stejnou velikost



Řešení rovnice 6. díl = MF

①

$$7x + 9 + 1 = 6x - 10 - 2x$$

$$7x + 10 = 4x - 10 \quad | -4x$$

$$3x + 10 = -10 \quad | -10$$

$$3x = -20 \quad | :3$$

$$\underline{\underline{x = -\frac{20}{3}}}$$

$$L = 7 \cdot \left(-\frac{20}{3}\right) + 9 + 1 = -\frac{140}{3} + 10 =$$

$$= \frac{-140 + 30}{3} = \frac{-110}{3}$$

$$P = 6 \cdot \left(-\frac{20}{3}\right) - 10 - 2 \cdot \left(-\frac{20}{3}\right) =$$

$$= -\frac{120}{3} - \frac{30}{3} + \frac{40}{3} = \frac{-110}{3}$$

$$\underline{\underline{L = P}}$$

②

$$9x - 7 = 6x + 14 + 6 \quad |$$

$$9x - 7 = 6x + 20 \quad | -6x$$

$$3x - 7 = 20 \quad | +7$$

$$3x = 27 \quad | :3$$

$$\underline{\underline{x = 9}}$$

$$L = 9 \cdot 9 - 7 = 81 - 7 = \underline{\underline{74}}$$

$$P = 6 \cdot 9 + 14 + 6 = 54 + 20 = \underline{\underline{74}}$$

$$\underline{\underline{L = P}}$$

③

$$6c + 30 + 2c = 5c - 4 - 1$$

$$8c + 30 = 5c - 5 \quad | -5c$$

$$3c + 30 = -5 \quad | -30$$

$$3c = -35 \quad | :3$$

$$\underline{\underline{c = -\frac{35}{3}}}$$

$$L = 6 \cdot \left(-\frac{35}{3}\right) + 30 + 2 \cdot \left(-\frac{35}{3}\right) =$$

$$= \frac{-210 + 90 - 70}{3} = \frac{-190}{3}$$

$$P = 5 \cdot \left(-\frac{35}{3}\right) - 4 - 1 = \frac{-175}{3} - 5 =$$

$$= \frac{-175 - 15}{3} = \frac{-190}{3}$$

$$\underline{\underline{L = P}}$$

④

$$8x - 10x - 2 = 40 - 2x$$

$$-7x - 2 = 40 - 2x \quad | +2x$$

$$-5x - 2 = 40 \quad | +2$$

$$-5x = 42 \quad | :(-5)$$

$$\underline{\underline{x = -\frac{42}{5}}}$$

$$L = 8 \cdot \left(-\frac{42}{5}\right) - 10 \cdot \left(-\frac{42}{5}\right) - 2 =$$

$$= \frac{-336}{5} + \frac{420}{5} - 2 = \frac{-336 + 420}{5} - 2 =$$

$$= -67\frac{1}{5} + 123\frac{5}{5} = \underline{\underline{56\frac{4}{5}}}$$

$$P = 40 - 2 \cdot \left(-\frac{42}{5}\right) = 40 + \frac{84}{5} = \frac{200 + 84}{5} =$$

$$= \frac{284}{5} = \underline{\underline{56\frac{4}{5}}}$$

⑤

$$4 + 3x + 2x = 12 + 4x - 5$$

$$4 + 5x = 7 + 4x \quad | -4x$$

$$4 + x = 7 \quad | -4$$

$$\underline{\underline{x = 3}}$$

$$L = 4 + 3 \cdot 3 + 2 \cdot 3 = 4 + 9 + 6 = \underline{\underline{19}}$$

$$P = 12 + 4 \cdot 3 - 5 = 24 - 5 = \underline{\underline{19}}$$

$$\underline{\underline{L = P}}$$

$$\begin{aligned} \textcircled{6} \quad 40 - 45x &= 90 - 35x & | +35x \\ 40 - 10x &= 90 & | -40 \\ -10x &= 50 & | :(-10) \\ \underline{x = 5} \end{aligned}$$

$$\begin{aligned} L &= 40 - 45 \cdot (-5) = 40 + 225 = \underline{\underline{265}} \\ P &= 90 - 35 \cdot (-5) = 90 + 175 = \underline{\underline{265}} \\ \underline{L = P} \end{aligned}$$

$$\begin{aligned} \textcircled{7} \quad 5 - 21 - (x - 7) &= 2x + 16 \\ 5 - 21 - x + 7 &= 2x + 16 \\ -9 - x &= 2x + 16 & | +9 \\ -x &= 2x + 25 & | -2x \\ -3x &= 25 & | :(-3) \\ \underline{x = -\frac{25}{3}} \end{aligned}$$

$$\begin{aligned} L &= 5 - 21 - \left(-\frac{25}{3} - 7\right) = -16 - \left(\frac{-25-21}{3}\right) \\ &= \frac{-48 + 46}{3} = \underline{\underline{-\frac{2}{3}}} \\ P &= 2 \cdot \left(-\frac{25}{3}\right) + 16 = -\frac{50}{3} + \frac{48}{3} = \underline{\underline{-\frac{2}{3}}} \\ \underline{L = P} \end{aligned}$$

$$\begin{aligned} \textcircled{8} \quad 5x - (4 + 2x) + 1 &= 8x + 2 \\ 5x - 4 - 2x + 1 &= 8x + 2 \\ 3x - 3 &= 8x + 2 & | +3 \\ 3x &= 8x + 5 & | -8x \\ -5x &= 5 & | :(-5) \\ \underline{x = -1} \end{aligned}$$

$$\begin{aligned} L &= 5 \cdot (-1) - (4 + 2 \cdot (-1)) + 1 = \\ &= -5 - (4 - 2) + 1 = -4 - 2 = \underline{\underline{-6}} \\ P &= 8 \cdot (-1) + 2 = -8 + 2 = \underline{\underline{-6}} \\ \underline{L = P} \end{aligned}$$

$$\begin{aligned} \textcircled{9} \quad 6 - (2x - 2) &= 0 \\ 6 - 2x + 2 &= 0 \\ 8 - 2x &= 0 & | -8 \\ -2x &= -8 & | :(-2) \\ \underline{x = 4} \end{aligned}$$

$$\begin{aligned} L &= 6 - (2 \cdot 4 - 2) = 6 - (8 - 2) = \underline{\underline{0}} \\ P &= 0 \\ \underline{L = P} \end{aligned}$$

$$\begin{aligned} \textcircled{10} \quad 2x - (x + 2) &= 6x - (x - 6) \\ 2x - x - 2 &= 6x - x + 6 \\ x - 2 &= 5x + 6 & | -5x \\ -4x - 2 &= 6 & | +2 \\ -4x &= 8 & | :(-4) \\ \underline{x = -2} \end{aligned}$$

$$\begin{aligned} L &= 2 \cdot (-2) - (-2 + 2) = \underline{\underline{-4}} \\ P &= 6 \cdot (-2) - (-2 - 6) = -12 + 8 = \\ &= \underline{\underline{-4}} \\ \underline{L = P} \end{aligned}$$

$$\begin{aligned} \textcircled{11} \quad -(4 - 3x) - x &= 2x - (10 - 6x) \\ -4 + 3x - x &= 2x - 10 + 6x \\ -4 + 2x &= 8x - 10 & | +4 \\ 2x &= 8x - 6 & | -8x \\ -6x &= -6 & | :(-6) \end{aligned}$$

$$\begin{aligned} \underline{x = 1} \\ L &= -(4 - 3) - 1 = -1 - 1 = \underline{\underline{-2}} \\ P &= 2 - (10 - 6) = 2 - 4 = \underline{\underline{-2}} \\ \underline{L = P} \end{aligned}$$