

Štvrtročná písomná práca – 9. ročník (1. časť)

Bez kalkulačky

1. Vypočítaj :

$$(-8)^2 = 64$$

$$-9^2 = -81$$

$$(-1)^9 = -1$$

$$-1^{13} = -1$$

$$-1^{18} = -1$$

$$-(-5)^3 = -125$$

$$0,04^2 = 0,0016$$

$$0,05^2 = 0,0025$$

$$-0,01^3 = -0,000001$$

$$\sqrt{0,09} = 0,3$$

$$\sqrt{169} = 13$$

$$\sqrt{0,000144} = 0,012$$

$$\sqrt{0,0001} = 0,01$$

$$\sqrt{0,0121} = 0,11$$

$$\sqrt{2,25} = 1,5$$

$$-\sqrt[3]{0,008} = -0,2$$

$$\sqrt[3]{0,000064} = 0,04$$

$$\sqrt[3]{0,000027} = 0,03$$

2. Zapíš ako mocniny :

$$\frac{8}{19} \cdot \frac{8}{19} \cdot \frac{8}{19} = \left(\frac{8}{19}\right)^3$$

$$(-3) \cdot 7 \cdot 7 \cdot (-3) \cdot (-3) = (-3)^3 \cdot 7^2$$

3. Dopln čísla tak, aby rovnosť platila:

$$\sqrt{\frac{81}{36}} = \frac{9}{6}$$

$$\sqrt{\frac{64}{16}} = 2$$

$$\sqrt{\frac{9}{81}} = \frac{1}{3}$$

$$\sqrt{\frac{49}{36}} = \frac{7}{6}$$

4. Zapíš číslo v tvare $a \cdot 10^n$; $1 \leq a < 10$, $n \in \mathbb{N}$

$$80\,000 = 8 \cdot 10^4$$

$$21\,000 = 2,1 \cdot 10^4$$

5. Vypočítaj:

$$(-3)^3 - 9^2 = -27 - 81 = -108$$

$$(-2)^2 - 2^3 + (-3)^2 = 4 - 8 + 9 = 5$$

$$(-1)^8 + 8^0 = 1 + 1 = 2$$

$$\frac{1^9 + \sqrt{4}}{\sqrt[3]{27}} = \frac{1+2}{3} = \frac{3}{3} = 1$$

$$(0,04)^2 : (-0,2)^2 - \sqrt{0,16} = 0,0016 : 0,04 - 0,4 = 0,04 - 0,4 = -0,36$$

$$\frac{-4^2}{\sqrt{256}} + \frac{\sqrt{10^2 + 7 \cdot 3}}{11} = \frac{-16}{16} + \frac{\sqrt{100+21}}{11} = -1 + \frac{\sqrt{121}}{11} = -1 + 1 = 0$$

$$(-3-5)^2 - (2-6)^3 = (-8)^2 - (-4)^3 = 64 - (-64) = 64 + 64 = 128$$

$$\left(\frac{3}{4}\right)^2 + \frac{\sqrt{25}}{4^2} - \frac{-2^3}{\sqrt{256}} = \frac{9}{16} + \frac{5}{16} - \frac{-8}{16} = \frac{9}{16} + \frac{5}{16} + \frac{8}{16} = \frac{22}{16} = \frac{11}{8}$$

$$\frac{\sqrt{12^2 + 5^2}}{\sqrt{11^2 - 1 + 7^2}} = \frac{\sqrt{144+25}}{\sqrt{121-1+49}} = \frac{\sqrt{169}}{\sqrt{120+49}} = \frac{\sqrt{169}}{\sqrt{169}} = 1$$

6. Objem kocky je 64 m^3 . Aký je jej povrch?

$$V = a^3 \quad a = 4 \text{ cm}$$

$$64 = a^3$$

$$a = \sqrt[3]{64}$$

$$S = 6 \cdot a^2$$

$$S = 6 \cdot 4^2 = 6 \cdot 16 = \underline{\underline{96 \text{ cm}^2}}$$

7. Povrch kocky je 294 cm^2 . Aký je jej objem?

$$S = 294 \text{ cm}^2$$

$$S = 6 \cdot a^2$$

$$294 = 6 \cdot a^2$$

$$a^2 = 294 : 6$$

$$a^2 = 49$$

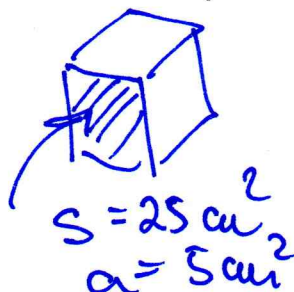
$$a = 7 \text{ cm}$$

$$V = a^3$$

$$V = 7^3$$

$$V = \underline{\underline{343 \text{ cm}^3}}$$

8. Obsah steny kocky je 25 cm^2 . Aký je objem tejto kocky?



$$V = a^3$$

$$V = 5^3 = \underline{\underline{125 \text{ cm}^3}}$$