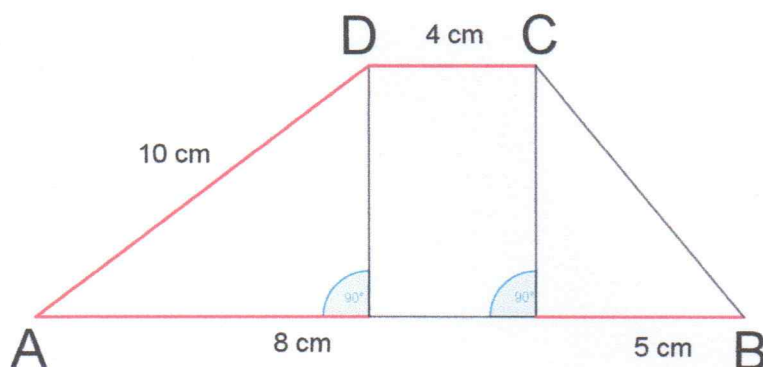


## Polročná písomná práca – 9. ročník

1. Vypočítaj dĺžku telesovej uhlopriečky kocky so stranou 12 cm.
2. Vypočítaj obsah a obvod lichobežníka ABCD na obrázku (poznáš len červené úsečky)



3. Na obrázku je kríž, ktorého ramená sú dlhé 5 cm. Vypočítaj dĺžku červenej lomenej čiary a obsah modrej plochy.

$$x^2 = 10^2 + 10^2$$

$$x^2 = 200$$

$$x = \sqrt{200}$$

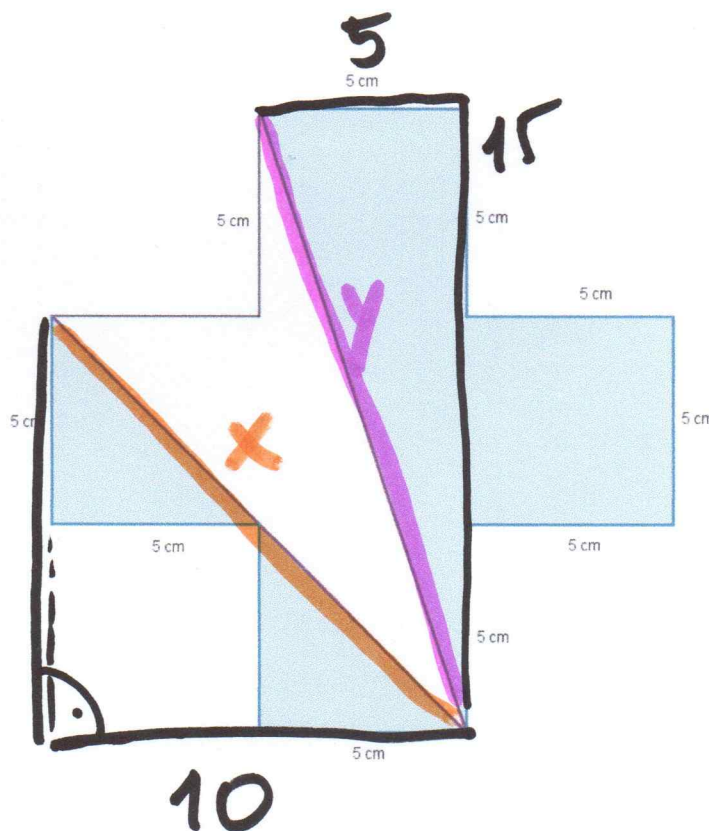
$$x = 14,14 \text{ cm}$$

$$y^2 = 15^2 + 5^2$$

$$y^2 = 225 + 25$$

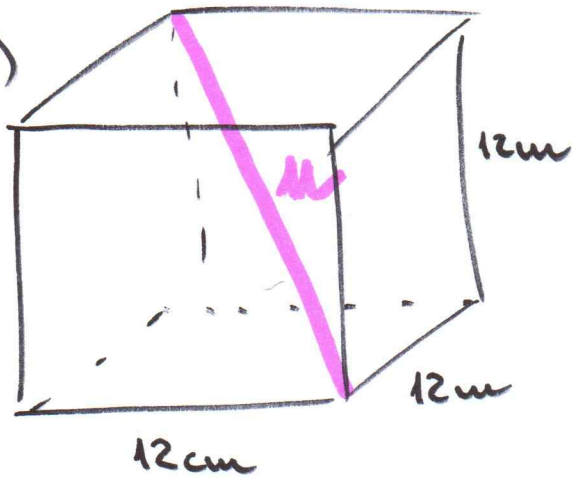
$$y = \sqrt{250}$$

$$y = 15,81 \text{ cm}$$



$$\approx \text{IATA} \quad 14,14 + 15,81 = 29,95 \text{ cm} \quad 1$$

1.a)



$$\mu = \sqrt{a^2 + a^2 + a^2}$$

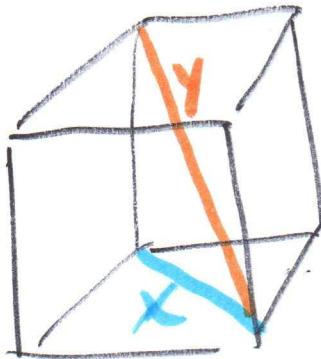
$$\mu = \sqrt{12^2 + 12^2 + 12^2}$$

$$\mu = \sqrt{144 + 144 + 144}$$

$$\mu = \sqrt{432}$$

$$\mu = \underline{\underline{20,78 \text{ cm}}}$$

1b)



$$x^2 = 12^2 + 12^2$$

$$x^2 = 144 + 144$$

$$x^2 = 288$$

$$x = \sqrt{288}$$

$$x = 16,97 \text{ cm}$$

$$y^2 = x^2 + 12^2$$

$$y^2 = 16,97^2 + 12^2$$

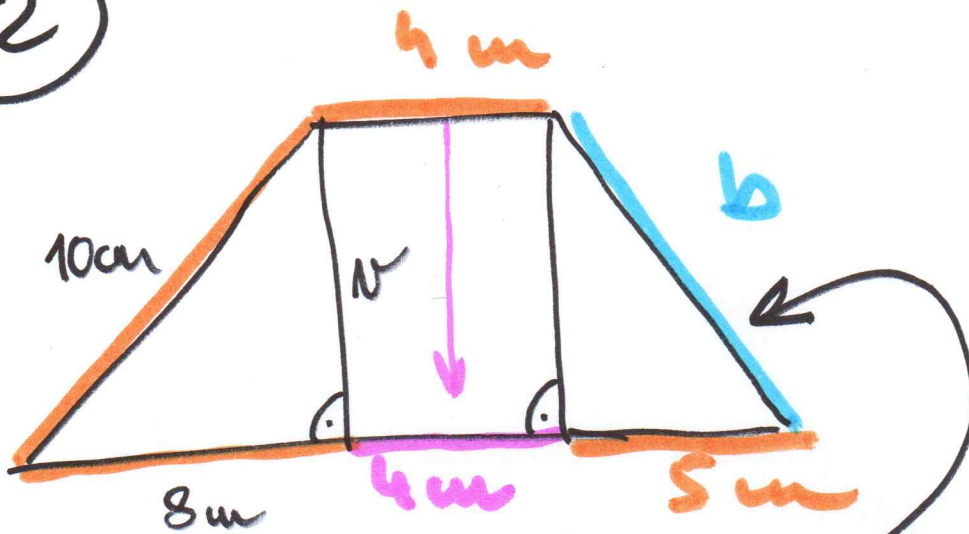
$$y^2 = 288 + 144$$

$$y^2 = 432$$

$$y = \sqrt{432}$$

$$y = \underline{\underline{20,78 \text{ cm}}}$$

2



1) VÝŠKA LICHOBĚŽNÍKA

$$h^2 = 10^2 - 8^2$$

$$h^2 = 100 - 64$$

$$h^2 = 36$$

$$h = 6 \text{ cm}$$

6 cm

2) OBSAH

$$S = \frac{(a+c) \cdot h}{2} =$$

$$= \frac{(17+4) \cdot 6}{2} =$$

$$= \frac{21 \cdot 6}{2} = \underline{\underline{63 \text{ cm}^2}}$$

$$b^2 = 5^2 + 6^2$$

$$b^2 = 25 + 36$$

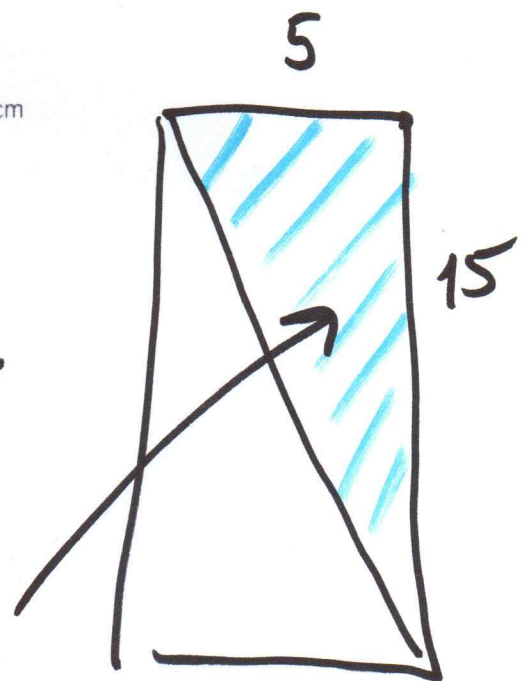
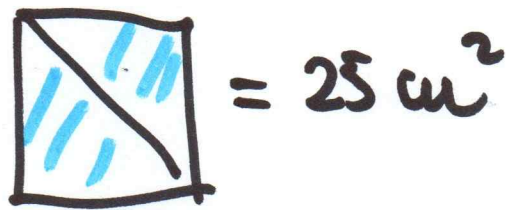
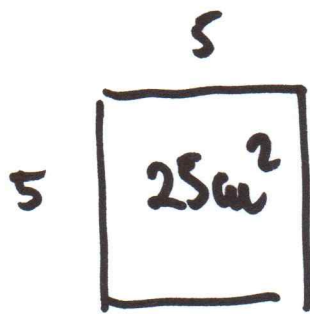
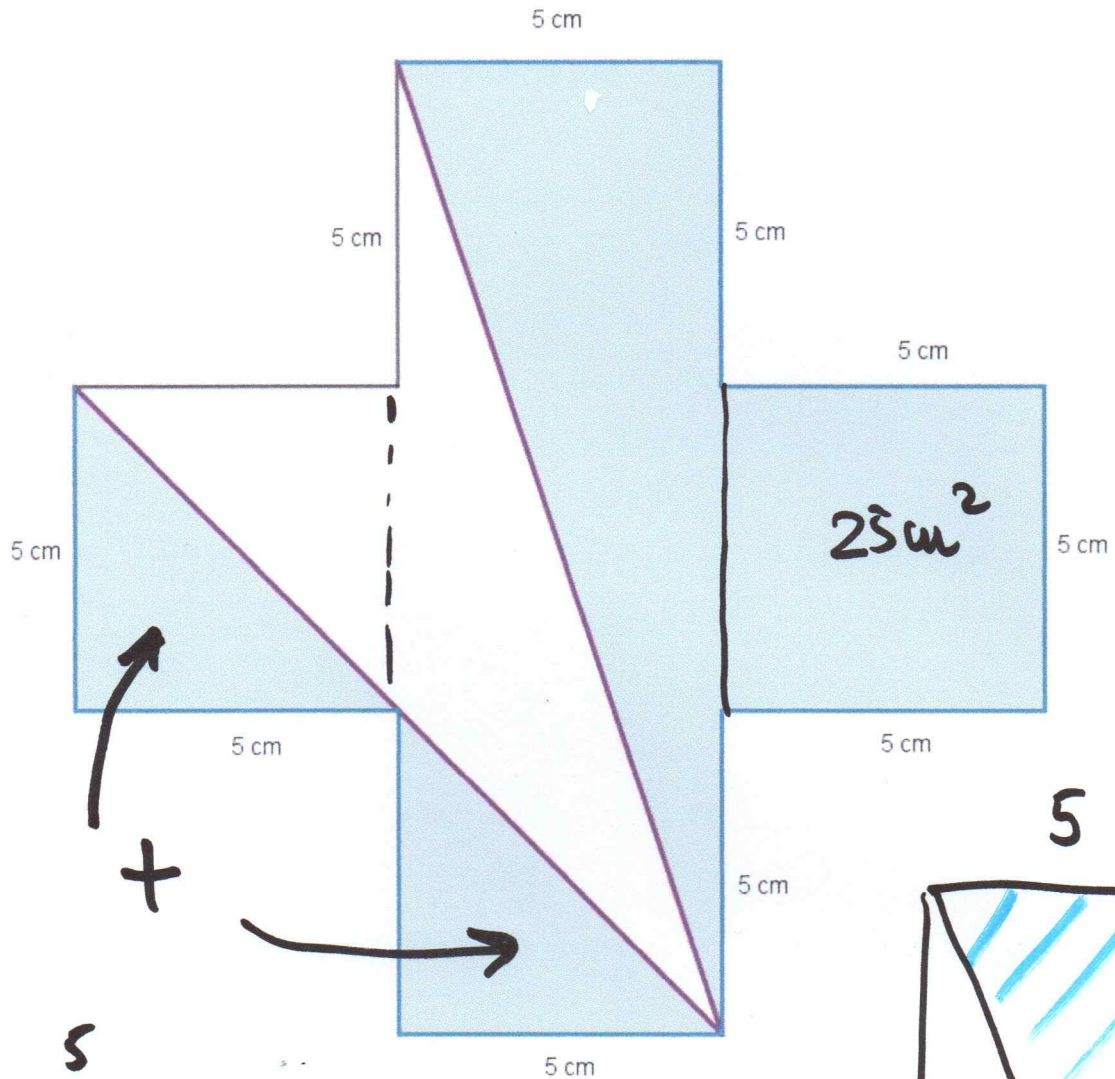
$$b^2 = 61$$

$$b = \sqrt{61}$$

$$b = 7,8 \text{ cm}$$

$$o = 17 + 7,8 + 4 + 10 =$$

$$= \underline{\underline{38,8 \text{ cm}}}$$



$$\frac{5 \cdot 15}{2} = 37,5$$

$$S = \text{[shaded square]} + \text{[shaded rectangle]} + \text{[shaded square]} =$$

$$= 25 + 37,5 + 25 = \underline{\underline{87,5 \text{ cm}^2}}$$

④

$$\frac{3x-1}{2} - \frac{1+x}{3} = 1 + \frac{3x+1}{4} \quad | \cdot 12$$

$$\frac{⑥}{12} \cdot \frac{④}{①} \cdot \frac{(3x-1)}{2} - \frac{④}{12} \cdot \frac{(1+x)}{3} = 12 \cdot 1 + \frac{③}{12} \cdot \frac{(3x+1)}{4}$$

$$6 \cdot (3x-1) - 4 \cdot (1+x) = 12 + 3(3x+1)$$
$$18x - 6 - 4 - 4x = 12 + 9x + 3$$

$$14x - 10 = 15 + 9x \quad | -9x$$

$$5x - 10 = 15 \quad | +10$$

$$5x = 25 \quad | :5$$

$$\underline{\underline{x = 5}}$$

$$\text{sk: } \bar{L} = \frac{3x-1}{2} - \frac{1+x}{3} = \frac{3 \cdot 5-1}{2} - \frac{1+5}{3} =$$

$$= \frac{15-1}{2} - \frac{6}{3} = \frac{14}{2} - 2 = 7 - 2 = \underline{\underline{5}};$$

$$P = 1 + \frac{3x+1}{4} = 1 + \frac{3 \cdot 5+1}{4} =$$

$$= 1 + \frac{16}{4} = 1 + 4 = \underline{\underline{5}} \quad \underline{\underline{\bar{L} = P}}$$

⑤

$$\frac{x-1}{3} - \frac{x-2}{4} \leq 1 \quad / \cdot 12$$

④

$$\frac{12 \cdot (x-1)}{3} - \frac{12 \cdot (x-2)}{4} \leq 12 \cdot 1$$

①                      ①

$$4(x-1) - 3(x-2) \leq 12$$

$$4x - 4 - 3x + 6 \leq 12$$

$$x + 2 \leq 12 \quad / - 2$$

$$x \leq 10$$

$$x \in \{1, 2, 3, \dots, 7, 8, 9, 10\}$$

4. Vyrieš rovnicu a urob skúšku správnosti:

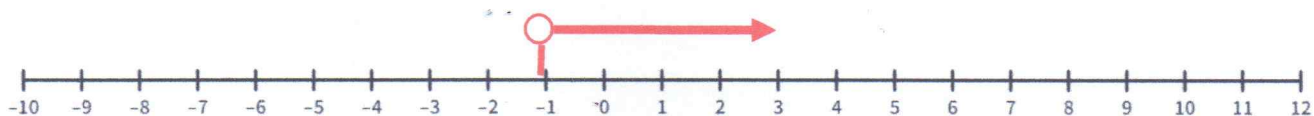
$$\frac{3x - 1}{2} - \frac{1 + x}{3} = 1 + \frac{3x + 1}{4}$$

5. Ktoré prirodzené čísla sú riešením nerovnice

$$\frac{x - 1}{3} - \frac{x - 2}{4} \leq 1$$

6. Zapiš nerovnice a interval ku každej číselnej osi

$$x > -1 \quad (-1; \infty)$$



$$-1 < x \leq 7 \quad (-1; 7]$$



$$-7 \leq x < 7 \quad [-7; 7)$$



MÀM TAM CHYBU?



KDE?

NAPĪS MI!