

MATEMATIKA

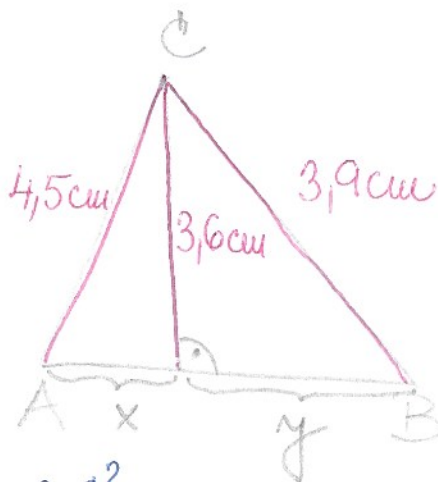
8. ročník

178

1. - 8. 4. 2020

ŘEŠENÍ

1) $\triangle ABC$:
 $a = 3,9 \text{ cm}$
 $b = 4,5 \text{ cm}$
 $v_c = 3,6 \text{ cm}$
 $\sigma = ? \text{ cm}$
 $S = ? \text{ cm}^2$



$$4,5^2 = x^2 + 3,6^2$$
$$20,25 = x^2 + 12,96$$
$$x^2 = 20,25 - 12,96$$
$$x^2 = 7,29$$
$$x = \sqrt{7,29}$$
$$x = 2,7 \text{ cm}$$

$$3,9^2 = y^2 + 3,6^2$$
$$15,21 = y^2 + 12,96$$
$$y^2 = 15,21 - 12,96$$
$$y^2 = 2,25$$
$$y = \sqrt{2,25}$$
$$y = 1,5 \text{ cm}$$

$$c = 2,7 + 1,5$$
$$c = 4,2 \text{ cm}$$

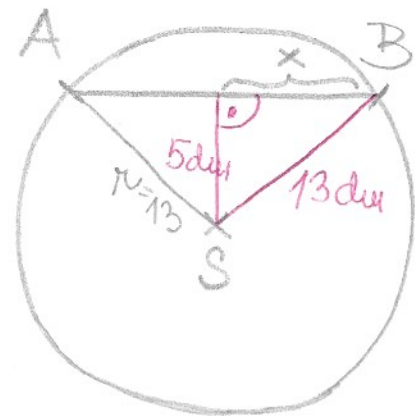
$$\sigma = a + b + c$$
$$\sigma = 3,9 + 4,5 + 4,2$$
$$\sigma = 12,6 \text{ cm}$$

$$S = \frac{c \cdot v_c}{2}$$
$$S = \frac{4,2 \cdot 3,6}{2}$$

$$S = 7,56 \text{ cm}^2$$

Obvod $\triangle ABC$ je 12,6 cm,
jeho obsah je 7,56 cm²

2) krůšnice: $|AB| = ? \text{ dm}$
 $k(S; r = 13 \text{ dm})$
 $r(S, AB) = 5 \text{ dm}$
 $\sigma_{\Delta ABS} = ? \text{ dm}^2$



$$13^2 = 5^2 + x^2$$

$$169 = 25 + x^2$$

$$x^2 = 169 - 25$$

$$x^2 = 144$$

$$x = \sqrt{144}$$

$$x = 12 \text{ dm}$$

$$|AB| = 2 \cdot x$$

$$|AB| = 2 \cdot 12$$

$$|AB| = 24 \text{ dm}$$

$$\sigma_{\Delta} = |AB| + r + r$$

$$\sigma_{\Delta} = 24 + 13 + 13$$

$$\sigma_{\Delta} = 50 \text{ dm}^2$$

□ ABCD: $\sigma = 50 \text{ dm}^2$
 $S = ? \text{ dm}^2$

$$S = a^2 \quad \sigma = 4 \cdot a$$

$$S = 12,5^2 \quad 50 = 4 \cdot a$$

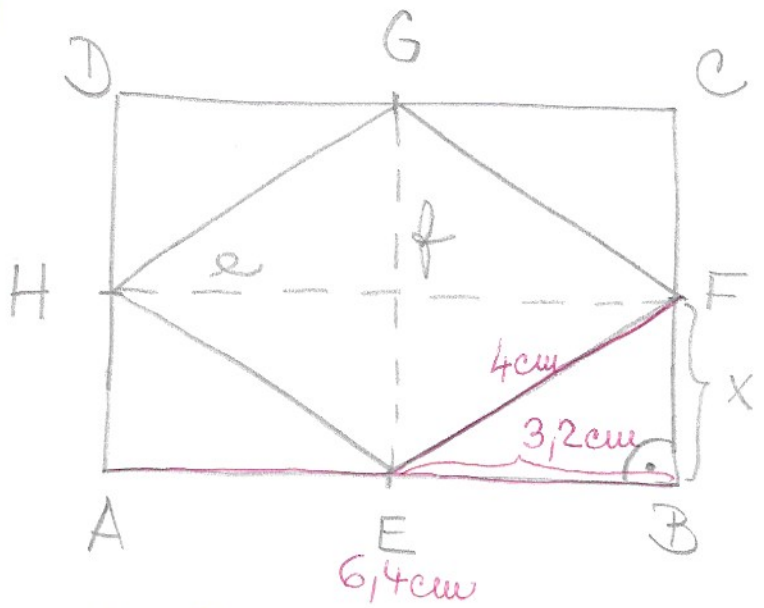
$$a = 50 : 4$$

$$a = 12,5 \text{ dm}$$

$$S = 156,25 \text{ dm}^2$$

Oblasť $\square ABCD$ je 156,25 dm².

3)



a) kosodševec

b) kosodš. EFGH: $|AB| = 6,4 \text{ cm} = e$
 $|EF| = 4 \text{ cm}$
 $S = ? \text{ cm}^2$

$$4^2 = 3,2^2 + x^2$$

$$16 = 10,24 + x^2$$

$$x^2 = 16 - 10,24$$

$$x^2 = 5,76$$

$$x = \sqrt{5,76}$$

$$x = 2,4 \text{ cm}$$

$$b = 2,4 \cdot 2$$

$$b = 4,8 \text{ cm} = f$$

Oblasť obrazce

$$S = \frac{e \cdot f}{2}$$

$$S = \frac{6,4 \cdot 4,8}{2}$$

je 15,36 cm², S = 15,36 cm²

c) $S_{\square} = a \cdot b$
 $S_{\square} = 6,4 \cdot 4,8$
 $S_{\square} = 30,72 \text{ cm}^2$

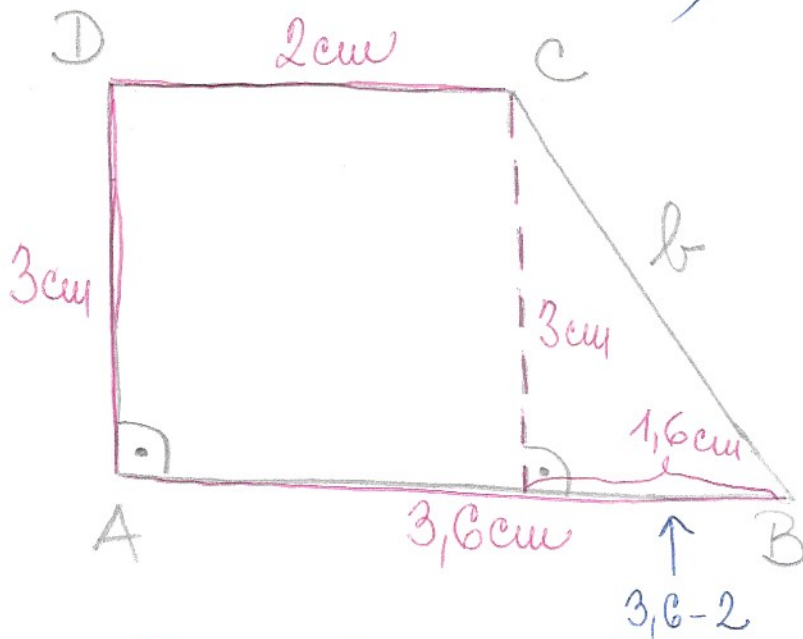
Už porovnaním oblastí je jasné, že je to 50% nebo VÝPOČTEM:

$$\begin{array}{r} 100\% \dots 30,72 \\ x\% \dots 15,36 \\ \hline \end{array}$$

Oblasť zaujíma 50%.

$$\frac{x}{100} = \frac{15,36}{30,72} \quad x = 50\%$$

4) pravouhly lich. ABCD: $|AB| = 3,6 \text{ cm}$
 $(AD \perp AB)$



$$|AD| = 3 \text{ cm}$$

$$\sigma = 2 \text{ cm}$$

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

$$b^2 = 3^2 + 1,6^2$$

$$b^2 = 9 + 2,56$$

$$b^2 = 11,56$$

$$b = \sqrt{11,56}$$

$$b = \underline{\underline{3,4 \text{ cm}}}$$

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

$$S = \frac{(3,6+2) \cdot 3}{2}$$

$$S = \underline{\underline{8,4 \text{ cm}^2}}$$

$$\sigma = a + b + c + d$$

$$\sigma = 3,6 + 3,4 + 2 + 3$$

$$\sigma = \underline{\underline{12 \text{ cm}}}$$

Obvod lich. je 12 cm,
 jeho obsah je 8,4 cm².

5) a) 100% ... 250 Kč^u

1% ... 25

14% ... x Kč^u

$$x = 14 \cdot 25$$

$$x = \underline{\underline{350 \text{ Kč}^u}}$$

b) 100% ... 60 m³

1% ... 0,6

53% ... x m³

$$x = 53 \cdot 0,6$$

$$x = \underline{\underline{31,8 \text{ m}^3}}$$

c) 100% ... 112

1% ... 1,12

x% ... 16,8

$$x = 16,8 : 1,12$$

$$x = \underline{\underline{15\%}}$$

d) 100% ... 260

1% ... 2,6

x% ... 494

$$x = 494 : 2,6$$

$$x = \underline{\underline{190\%}}$$

e) 115% ... 460 ~~460~~

1% ... 4 (460 : 115)

100% ... 400

f) 72% ... 25,2

1% ... 3,5 (25,2 : 7,2)

100% ... 350