

Test c. 7

$$1) \frac{7}{1000} (4100 + 6900) = \frac{7 \cdot 11000}{1000} = \underline{\underline{77}}$$

$$2) 49 + \sqrt{500^2 - 400^2} \cdot \sqrt{(-1)^2} = 49 + \sqrt{250000 - 160000} \cdot \sqrt{1} = 49 + \sqrt{90000} \cdot 1 = 49 + 300 = \underline{\underline{349}}$$

$$0,02^2 : 0,002 - 0,1^2 : 0,02 = 0,0004 : 0,002 - 0,01 : 0,02 = 0,2 - 0,5 = \underline{\underline{-0,3}}$$

$$3) (13 - \frac{3}{4}) : (1 + \frac{5}{6}) = (\frac{13}{10} - \frac{3}{4}) : \frac{11}{6} = \frac{26-15}{20} \cdot \frac{6}{11} = \frac{3}{10} = \underline{\underline{0,3}}$$

$$\frac{\frac{2}{3} : \frac{4}{9} - \frac{5}{8} \cdot 4}{\frac{2}{3}} = \frac{\frac{2}{3} \cdot \frac{9}{4} - \frac{5}{2}}{\frac{2}{3}} = \frac{\frac{3}{2} - \frac{5}{2}}{\frac{2}{3}} = -1 \cdot \frac{3}{2} = \underline{\underline{-\frac{3}{2} = -1,5}}$$

$$4) (2x+5)^2 - (2x-5)^2 = 4x^2 + 20x + 25 - (4x^2 - 20x + 25) = 4x^2 + 20x + 25 + 20x - 25 - 4x^2 = \underline{\underline{40x}}$$

$$15y(2-y) - 2(y-3y) - y(1-y) = 3y - 15y^2 + 4y - y + y^2 = \underline{\underline{6y - 0,5y^2}}$$

$$5) \frac{(x+1)(x-3) - 2,5 = x(x+1) + \frac{1}{2}}{x^2 - 3x + x - 3 - 2,5 = x^2 + x + 0,5}$$

$$-3x = 6$$

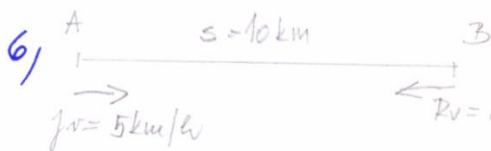
$$\underline{\underline{x = -2}}$$

$$\frac{4y-5}{3} - \frac{3}{2} \cdot \frac{2y}{6} = \frac{6-y}{2} + \frac{2}{3} \quad | \cdot 6$$

$$8y - 10 - 3y = 18 - 3y + 4$$

$$8y = 32$$

$$\underline{\underline{y = 4}}$$



$$s = s_1 + s_2 \quad s = v \cdot t$$

Radim celou trasu ušel za $\frac{1}{2}$ h

x ... doba Radima

$$\underline{5x + 20x = 10}$$

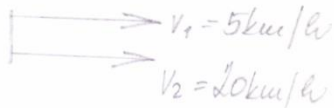
$$25x = 10$$

$$x = \frac{10}{25} = \frac{2}{5} \text{ [h]} = \underline{\underline{24 \text{ min}}}$$

... čas Radima na celou trasu

(2)

6.2



$$s_1 = s_2$$

x... doba chůze jirky

$$\frac{5(x+0,5)}{5x+2,5} = 20x$$

$$5x + 2,5 = 20x$$

$$15x = 2,5$$

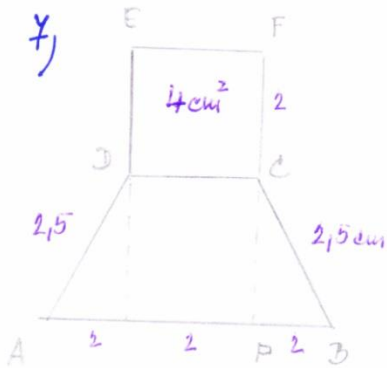
$$x = \frac{2,5}{15} = \frac{25}{150} = \frac{1}{6} \text{ [h]} = \underline{\underline{10 \text{ min}}}$$

Radii jirky přádjel za 10 min.

6.3 čas Radiing: $t = \frac{1}{2} \text{ h} + \frac{1}{6} \text{ h} = \dots = \underline{\underline{\frac{2}{3} \text{ h}}}$

dráha jirky: $s = v_1 \cdot t = 5 \cdot \frac{2}{3} = \frac{10}{3} \text{ [km]} = \frac{1}{3} \text{ a } 10 \text{ km} \Rightarrow \text{jirka ušel}$
 $\frac{1}{3} \text{ a celá trasy.}$

7)



$$|FC| = \sqrt{s} = \sqrt{4} = 2 \text{ [cm]}$$

poměr 2:1 \Rightarrow 3 díly $\Rightarrow |AB| = 3 \cdot 2 \text{ cm} = \underline{\underline{6 \text{ cm}}}$
 $|PB| = 2 \text{ cm}$

$$|CP|^2 = |CB|^2 - |PB|^2$$

$$|CP|^2 = 2,5^2 - 2^2$$

$$|CP| = 1,5 \text{ cm} \dots \text{ výška lichoběžníka}$$

$$o = a + 2 \cdot b + c$$

$$o = 6 + 2 \cdot 2,5 + 2$$

$$o = \underline{\underline{13 \text{ cm}}}$$

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

$$S = \frac{(6+2) \cdot 1,5}{2}$$

$$S = \underline{\underline{6 \text{ cm}^2}}$$

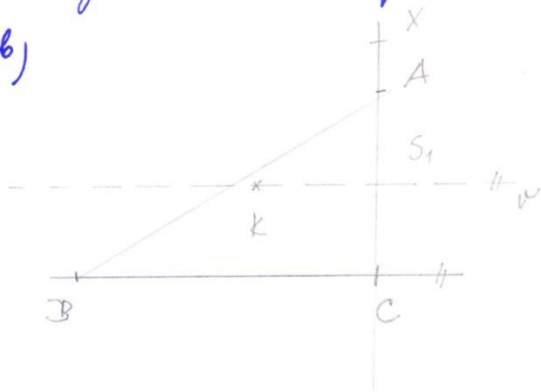
8) $2,5 \text{ ha} - \square \cdot 250 \text{ m}^2 = 1 \text{ ha}$
 $25000 \text{ m}^2 - \underline{\underline{60}} \cdot 250 \text{ m}^2 = 10000 \text{ m}^2$

$$\frac{5}{6} \text{ min} - (3 + \square) \text{ s} = \frac{3}{5} \text{ min}$$

$$50 \text{ s} - (3 + \underline{\underline{11}}) \text{ s} = 36 \text{ s}$$

9) a) vsy stran se musi protnout na preponě ☺

b)



Postup: 1) $\angle BCX; |\angle BCX| = 90^\circ$

2) $v; v \parallel BC; K \in v$

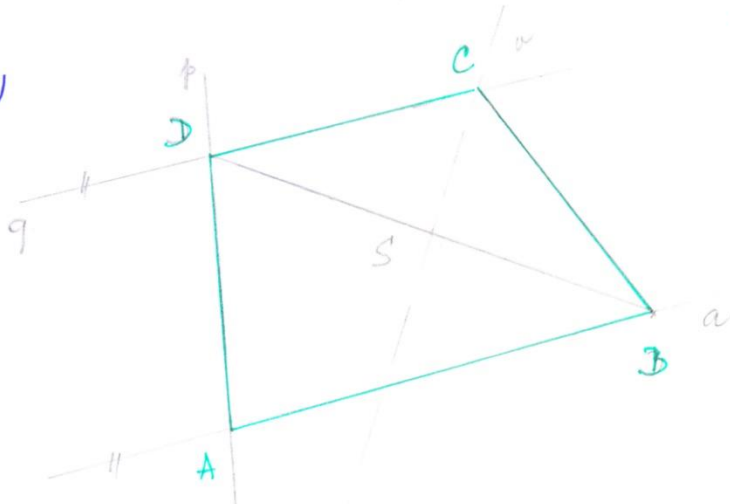
3) $s_1; s_1 \in v \cap \rightarrow CX$

4) $A; A \in \rightarrow CX; |AS_1| = |S_1C|$

5) $\triangle ABC$

existují 2 řešení

10)



1) nklonářka DB

2) ma $|BD|$ a střed S

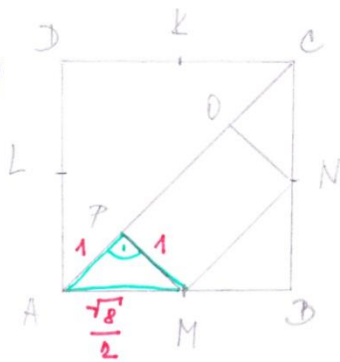
3) $C; C \in q \cap v$

4) $a; a \parallel q; B \in a$

5) $A; A \in q \cap p$

6) lichoběžník ABCD

11)



$$|AD| = \sqrt{8}$$

$$c^2 = a^2 + b^2$$

$$c^2 = 2a^2$$

$$(\sqrt{2})^2 = 2a^2$$

$$2 = 2a^2$$

$$a^2 = 1$$

$$a = 1 = |MP| = |AP|$$

pro řešení $\triangle \cup \triangle AMP$

$$\sqrt{8} = \sqrt{2 \cdot 4} = 2 \cdot \sqrt{2}$$

$$\frac{\sqrt{8}}{2} = \frac{2 \cdot \sqrt{2}}{2} = \sqrt{2}$$

$\triangle ABC$:

$$|AC|^2 = |AB|^2 + |BC|^2$$

$$|AC|^2 = (\sqrt{8})^2 + (\sqrt{8})^2$$

$$|AC|^2 = 16$$

$$|AC| = 4 \text{ cm}$$

$$|MN| = |OP| = |AC| - |AP| - |OC|$$

$$|MN| = 4 - 1 - 1 = 2 \text{ [cm]}$$

$$11.1 - |MN| : |MP| = 2 : 1 \Rightarrow \underline{\underline{ANO}}$$