cermat

MATURITNÍ ZKOUŠKA 2026 – JARNÍ TERMÍN

SPRÁVNĚ VYPLNĚNÝ ZÁZNAMOVÝ ARCH

Konal(a) zkoušku ☐ Vyloučen(a) ☐ Nepřítomen(na) či nedokončil(a) ☐

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List 1 ze 2

ZÁZNAMOVÝ ARCH – STRANA 1–4

1

$k = -\frac{5}{4}$

2

$x \in (-\infty; -1) \cup (3; +\infty)$

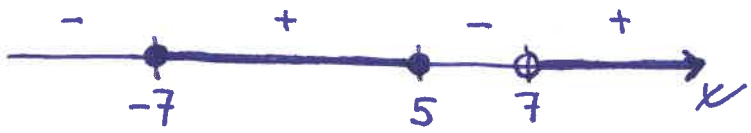
3 Uveďte postup řešení.

$$\frac{x+7}{7-x} \leq \frac{x+7}{2}$$

$$0 \leq \frac{x+7}{2} + \frac{x+7}{x-7}$$

$$0 \leq \frac{(x+7)(x-7) + 2(x+7)}{2(x-7)}$$

$$0 \leq \frac{(x+7)(x-5)}{2(x-7)}$$



$K = \langle -7; 5 \rangle \cup (7; +\infty)$

4 Uveďte postup řešení.

$$\frac{1}{a^2} \cdot \left(1 - \frac{1}{a-1}\right)^{-2} \cdot \left(a - 1 - \frac{1}{a-1}\right) = \frac{1}{a^2} \cdot \left(\frac{a-1-1}{a-1}\right)^{-2} \cdot \frac{(a-1)^2 - 1}{a-1} =$$

$$= \frac{1}{a^2} \cdot \frac{(a-1)^2}{(a-2)^2} \cdot \frac{a^2 - 2a + 1 - 1}{a-1} = \frac{1}{a^2} \cdot \frac{a-1}{(a-2)^2} \cdot \frac{a(a-2)}{1} =$$

$$= \frac{a-1}{a(a-2)}$$

5

5.1	5.2
$m = 6$	$z^6 = -64$

6

1,9 bodu

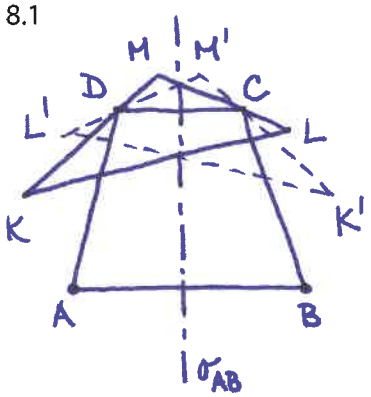
7

7.1	7.2
$\|AK\| = 11$ cm	$S = 190\ cm^2$

8

Obtáhněte vše propisovací tužkou.

8.1



KLMK ... hranice $\triangle$ KLM

1) $D_i\ \sigma(\sigma_{AB}) : C \to C' = D$

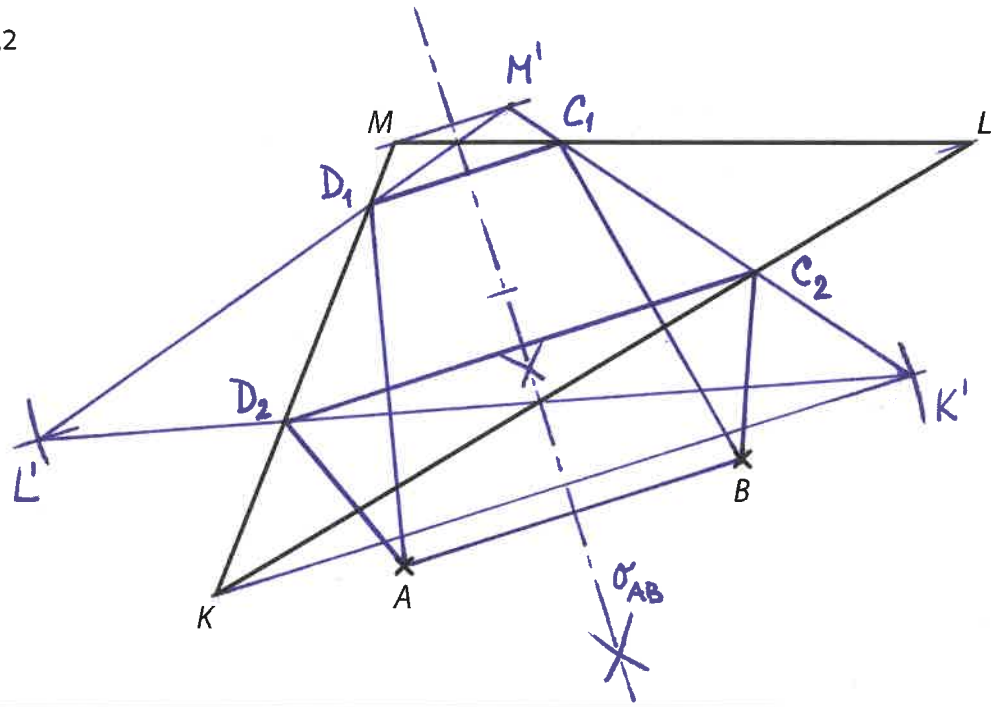
$C' \in K'L'M'K'$

$\sigma(\sigma_{AB}) : KLMK \to K'L'M'K'$

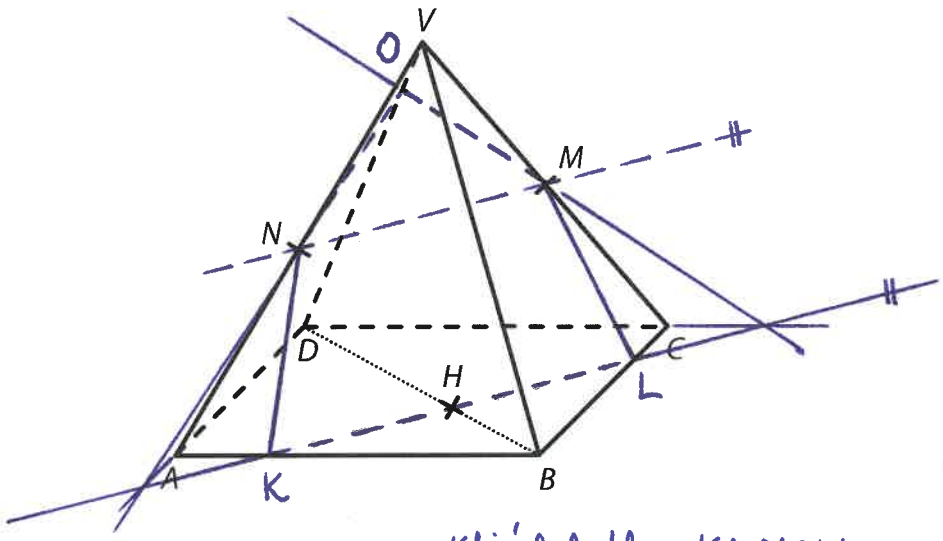
$D \in KLMK \wedge D \in K'L'M'K'$

2) $C_i\ \sigma(\sigma_{AB}) : D \to C$

8.2



9 Obtáhněte vše propisovací tužkou.



pětiúhelník KLMON

10 Uveďte postup řešení.

$e: \frac{x^2}{a^2} + \frac{y^2}{1} = 1 \qquad a > 0$

$l: y = x - 2$

$l \cap e: \frac{x^2}{a^2} + \frac{(x-2)^2}{1} = 1$ právě 1 společný bod

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

$\left(1 + \frac{1}{a^2}\right)x^2 - 4x + 3 = 0$

$D = 16 - 4 \cdot 3 \cdot \left(1 + \frac{1}{a^2}\right) \qquad D = 0$

$16 - 12 - \frac{12}{a^2} = 0$

$4 = \frac{12}{a^2}$

$a^2 = 3$

$e: \frac{x^2}{3} + \frac{y^2}{1} = 1$

11 Uveďte v obou částech úlohy postup řešení.

11.1

$\leftrightarrow A_0A_4 : x+y-4=0$

$A_1[1;a_1] \in \quad \leftrightarrow A_0A_4 : 1+a_1-4=0$

$a_1 = 3 \quad A_1[1;3]$

$\leftrightarrow A_1X_5 : \vec{u}_1 = X_5 - A_1 = (4;-3) \quad \vec{n}_1 = (3;4)$

$3x+4y-15=0$

$A_2[2;a_2] \in \leftrightarrow A_1X_5 : 3\cdot 2 + 4\cdot a_2 - 15 = 0$

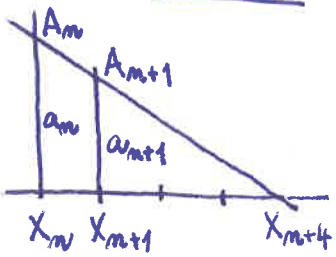
$4a_2 = 9 \rightarrow a_2 = \frac{9}{4}$

11.2

$\Delta A_n X_n X_{n+4} \sim \Delta A_{n+1} X_{n+1} X_{n+4}$

$|X_{n+1}X_{n+4}| = \frac{3}{4}|X_nX_{n+4}|$

$a_{n+1} = \frac{3}{4}a_n$



posloupnost : $a_0 = 4 \quad a_{n+1} = \frac{3}{4}a_n \Rightarrow a_n = 4\left(\frac{3}{4}\right)^n$

$\leftrightarrow A_nX_{n+4} : \vec{u}_n = X_{n+4} - A_n = (n+4-n;\ 0-4\cdot\left(\frac{3}{4}\right)^n)$

$\vec{n}_n = (4\cdot\left(\frac{3}{4}\right)^n;\ 4)$

$4\cdot\left(\frac{3}{4}\right)^n x + 4y - c = 0 \qquad X_{n+4} \in \leftrightarrow A_nX_{n+4}$

$4\cdot\left(\frac{3}{4}\right)^n\cdot(n+4) + 0 - c = 0 \rightarrow c = 4\cdot\left(\frac{3}{4}\right)^n(n+4)$

$4\cdot\left(\frac{3}{4}\right)^n x + 4y - 4\left(\frac{3}{4}\right)^n(n+4) = 0 \qquad |:4\cdot 4^n$

$3^n x + 4^n\cdot y - 3^n(n+4) = 0$

12	A	B	C	D	E	F
12.1			X			
12.2						X
12.3					X	

13	A	B	C	D	E	F
13.1		X				
13.2	X					
13.3					X	

	A	B	C	D	E
14			X		
15				X	
16		X			
17			X		
18	X				
19				X	
20		X			
21				X	

22	A	N
22.1		X
22.2	X	
22.3		X