



UDHËZIME PËR VLERËSIM

PROVIMI I MATURËS/PROVIMI PROFESIONAL – MATEMATIKË (NIVELI BAZË)

13 QERSHOR 2024

Zgjidhjet e detyrave me zgjedhje të shumëfishtë

Numri rendor i detyrës	Përgjigjja e saktë
1.	D
2.	C
3.	B
4.	C
5.	B
6.	C
7.	C
8.	A

9.

a) $(\sqrt{12} - \sqrt{-3})(3 + \sqrt{-4}) = (2\sqrt{3} - i\sqrt{3})(3 + 2i) \dots\dots\dots 1 \text{ pikë}$

$6\sqrt{3} + 4i\sqrt{3} - 3i\sqrt{3} - 2\sqrt{3} \cdot (-1) = 8\sqrt{3} + i\sqrt{3} \dots\dots\dots 1 \text{ pikë}$

b) $24^{27} : 8^{27} = 3^{27}$ ose $9^{11} + 9^{11} + 9^{11} = 3 \cdot 3^{22} \dots\dots\dots 1 \text{ pikë}$

$\frac{3^{27}}{3^{23}} = 3^4 = 81 \dots\dots\dots 1 \text{ pikë}$

10.

$4x^4 - y^2x^2 + 24x^3 - 6xy^2 = x(4x^3 - y^2x + 24x^2 - 6y^2) \dots\dots\dots 1 \text{ pikë}$

Është formuar prodhimi $(4x^2 - y^2)(x^2 + 6x) \dots\dots\dots 1 \text{ pikë}$

$x(2x - y)(2x + y)(x + 6) \dots\dots\dots 1 \text{ pikë}$

11.

$$\frac{1-5x}{1+5x} - \frac{1+5x}{1-5x} = \frac{20}{1-25x^2} \dots\dots\dots 1 \text{ pikë}$$

$$\frac{(1-5x)^2 - (1+5x)^2}{(1+5x)(1-5x)} = \frac{20}{(1+5x)(1-5x)} \dots\dots\dots 1 \text{ pikë}$$

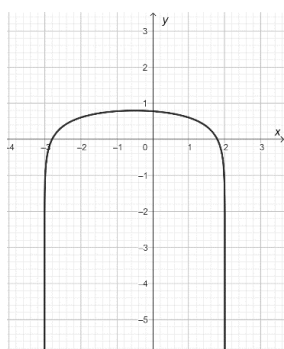
$$1-10x+25x^2 - 1-10x-25x^2 = 20 \dots\dots\dots 1 \text{ pikë}$$

$$x = -1 \dots\dots\dots 1 \text{ pikë}$$

12.

$$-x^2 - x + 6 > 0 \dots\dots\dots 1 \text{ pikë}$$

$$x_1 = -3, x_2 = 2 \dots\dots\dots 1 \text{ pikë}$$



$$x \in (-3, 2) \dots\dots\dots 1 \text{ pikë}$$

13.

$$\left(\frac{3}{7}\right)^{\frac{x^2-2x}{x^2}} = 1 \Rightarrow \left(\frac{3}{7}\right)^{\frac{x^2-2x}{x^2}} = \left(\frac{3}{7}\right)^0 \dots\dots\dots 1 \text{ pikë}$$

$$\frac{x^2-2x}{x^2} = 0 \Rightarrow x^2 - 2x = 0 \dots\dots\dots 1 \text{ pikë}$$

$$x(x-2) = 0 \Rightarrow x = 0 \text{ ose } x = 2 \dots\dots\dots 1 \text{ pikë}$$

$$\text{Pasi që } x \neq 0 \Rightarrow x = 2 \dots\dots\dots 1 \text{ pikë}$$

14.

Prerja me boshtin x janë pikat e formës $(x, 0)$, prandaj $\sin\left(x + \frac{3\pi}{4}\right) = 0$

$$\dots\dots\dots 1 \text{ pikë}$$

$$\sin\left(x + \frac{3\pi}{4}\right) = 0 \Rightarrow x + \frac{3\pi}{4} = k\pi, k \in \mathbb{Z} \dots\dots\dots 1 \text{ pikë}$$

Pikat e prerjes:

Për $k = -1 \Rightarrow \left(-\frac{7\pi}{4}, 0\right)$

Për $k = 0 \Rightarrow \left(-\frac{3\pi}{4}, 0\right)$

Për $k = 1 \Rightarrow \left(\frac{\pi}{4}, 0\right)$

Për $k = 2 \Rightarrow \left(\frac{5\pi}{4}, 0\right)$ 1 pikë

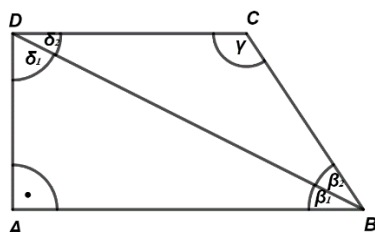
15.

$3x + 4y = 12 \Rightarrow y = -\frac{3}{4}x + 3 \Rightarrow k = -\frac{3}{4}$ 1 pikë

Kushti i normalitetit: $k_{AB} \cdot \left(-\frac{3}{4}\right) = -1 \Rightarrow k_{AB} = \frac{4}{3}$ 1 pikë

$k_{AB} = \frac{y_2 - y_1}{x_2 - x_1} \Rightarrow \frac{a + 3}{3} = \frac{4}{3} \Rightarrow a = 1$ 1 pikë

16.



$\delta_1 = \sphericalangle BDA = 64^\circ$, $\gamma = \sphericalangle BCD$ është këndi i gjerë i trapezit

$\triangle BDC$ është barakrahës $\Rightarrow \beta_2 = \delta_2 = 90^\circ - \delta_1 = 26^\circ$ 1 pikë

$\gamma = 180^\circ - 2\delta_2 = 128^\circ$ 1 pikë

17.

$V_t = \frac{1}{2}V_{topit} + V_{cilindrit} + V_{konit}$ i $V_t = \frac{1}{2} \cdot \frac{4}{3}r^3\pi + r^2\pi H_{e\ cilindrit} + \frac{1}{3}r^2\pi H_{e\ konit}$ 1 pikë

$r_{e\ topit} = r_{e\ cilindrit} = r_{e\ konit} = r = 3\text{ cm}$ 1 pikë

$H_{e\ konit}^2 = 5^2 - 3^2 \Rightarrow H_{e\ konit} = 4\text{ cm}$ 1 pikë

$H_{e\ cilindrit} = 17\text{ cm} - r - H_{e\ konit} = 10\text{ cm}$ 1 pikë

$V_t = 120\pi\text{ cm}^3$ 1 pikë

18.

$$S_{2024} = \frac{2024}{2}(2a_1 + 2023d) \dots\dots\dots 1 \text{ pikë}$$

$$a_1 = \frac{2023}{2024}, d = -\frac{1}{2024} \dots\dots\dots 1 \text{ pikë}$$

$$S_{2024} = \frac{2023}{2} \dots\dots\dots 1 \text{ pikë}$$

19.

$$f'(x) = (e^x)'(4x^3 - 12x) + e^x(4x^3 - 12x)' \dots\dots\dots 1 \text{ pikë}$$

$$f'(x) = e^x(4x^3 + 12x^2 - 12x - 12) \dots\dots\dots 1 \text{ pikë}$$

20.

$$\lim_{x \rightarrow 1} \left(1 - \frac{1}{x}\right) \left(\frac{3}{1-x^2}\right) = \lim_{x \rightarrow 1} \left(\frac{x-1}{x}\right) \left(\frac{3}{(1-x)(1+x)}\right) \dots\dots\dots 1 \text{ pikë}$$

$$\lim_{x \rightarrow 1} \left(\frac{-3}{x(1+x)}\right) = -\frac{3}{2} \dots\dots\dots 1 \text{ pikë}$$