

11-05

$$1. (6\sqrt{3} \sin kx - 2\sqrt{2} \operatorname{tg} x) + (3 \sin x - 1) = 0$$

$$2\sqrt{2} \operatorname{tg} x (3 \sin x - 1) + 1 (3 \sin x - 1) = 0$$

$$(2\sqrt{2} \operatorname{tg} x + 1) (3 \sin x - 1) = 0$$

$$\operatorname{tg} x = -\frac{\sqrt{2}}{4} \quad \sin x = \frac{1}{3}$$

$$x_1 = -\operatorname{arctg} \frac{\sqrt{2}}{4} + \pi k \quad x_2 = (-1)^n \operatorname{arcsin} \frac{1}{3} + \pi n \quad \text{66}$$

$[0, 2\pi]$

$$k=0 \quad x = -\operatorname{arctg} \frac{\sqrt{2}}{4} \quad k=0 \quad x = \operatorname{arcsin} \frac{1}{3}$$

$$k=1 \quad x = \pi - \operatorname{arctg} \frac{\sqrt{2}}{4} \quad k=1 \quad x = \pi - \operatorname{arcsin} \frac{1}{3}$$

$$k=2 \quad x = 2\pi - \operatorname{arctg} \frac{\sqrt{2}}{4} \quad k=2 \quad x = \operatorname{arcsin} \frac{1}{3}$$

$$k=3 \quad x = \pi - \operatorname{arctg} \frac{\sqrt{2}}{4} \quad k=3 \quad x = \pi - \operatorname{arcsin} \frac{1}{3}$$

Ответ: 3 решения.

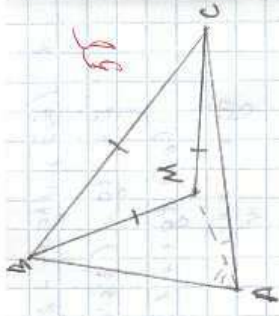
$$2. \frac{1}{\sqrt{2}+1} + \frac{1}{\sqrt{3}+2} + \frac{1}{\sqrt{2}+\sqrt{3}} = 1$$

$$1) \frac{1}{\sqrt{2}+1} \cdot \frac{\sqrt{2}-1}{\sqrt{2}-1} = \frac{\sqrt{2}-1}{2-1} = \sqrt{2}-1$$

$$2) \frac{1}{\sqrt{3}+2} \cdot \frac{\sqrt{3}-2}{\sqrt{3}-2} = \frac{\sqrt{3}-2}{3-4} = -\sqrt{3}+2$$

$$3) \frac{1}{\sqrt{2}+\sqrt{3}} \cdot \frac{\sqrt{2}-\sqrt{3}}{\sqrt{2}-\sqrt{3}} = \frac{\sqrt{2}-\sqrt{3}}{2-3} = -\sqrt{2}+\sqrt{3} \quad \text{46}$$

$$\sqrt{2} - 1 - \sqrt{3} + 2 - \sqrt{2} + \sqrt{3} = 1$$



4. 1 Punkt - Problem.

$$\angle C = 90^\circ \Rightarrow \angle MCA = 10^\circ$$

$$\angle B = 80^\circ \Rightarrow \angle MBA = 20^\circ$$

$$5. 3x^2 + 4xy - 7y^2 = 13$$

$$3x^2 - 3xy + 7xy - 7y^2 = 13$$

$$(3x^2 - 3xy) + (7xy - 7y^2) = 13$$

$$3x(x-y) + 7y(x-y) = 13$$

$$(x-y)(3x+7y) = 13$$

$$13 = x \cdot 13$$

$$13 = -1 \cdot (-13)$$

$$\begin{cases} x-y=1 \\ 3x+7y=13 \end{cases}$$

$$\begin{cases} x=1+y \\ 3 \cdot (1+y) + 7y = 13 \end{cases}$$

$$3 + 3y + 7y = 13$$

$$10y = 10$$

$$y = 1 \quad x = 2$$

$$\begin{cases} x-y=13 \\ 3x+7y=1 \end{cases}$$

$$\begin{cases} x=13+y \\ 3 \cdot (13+y) + 7y = 1 \end{cases}$$

$$39 + 3y + 7y = 1$$

$$10y = -38$$

$$y = -3.8 \quad x = 9.2$$

$$\begin{cases} x-y=-1 \\ 3x+7y=-13 \end{cases}$$

$$x=2y-1$$

$$3(2y-1) + 7y = -13$$

$$6y - 3 + 7y = -13$$

$$13y = -10$$

$$y = -1 \quad x = -2$$

$$\begin{cases} x-y=-13 \\ 3x+7y=-1 \end{cases}$$

$$x=y-13$$

$$3(y-13) + 7y = -1$$

$$3y - 39 + 7y = -1$$

$$10y = 38$$

$$y = 3.8 \quad x = 9.2$$

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