

نام دبیر: آقای نردانی

تاریخ امتحان:

رشته تحصیلی:

مدیریت آموزش و پرورش منطقه ۱۴

دبیرستان غیر دولتی پسرانه پیام غدیر

پایانی اول ۱۴۰۲-۱۴۰۱

پاسخ نامه درس:

ریاضی دهم

ساعت شروع امتحان: صبح

ستاد
امتحانات



الف: منتهای ۱) ب: $(4x-1)-2 = -2$

ج: -2 و -3 : \rightarrow و \rightarrow در نتیجه حقیقی $\Delta = 4 - 4x - 4x^2 = 2$

۲) الف: ص ب: ص ج: ع د: ع

الف:



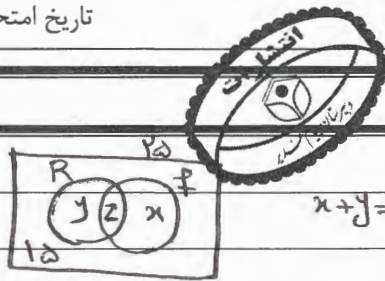
$\bar{V} \Rightarrow 2, 3, 4, 5, 6, 7, 8 =$ اعداد طبیعی

ب:
$$\frac{(4x \frac{1}{4}) - 2x(\frac{\sqrt{3}}{4})^2 - (\sqrt{3})^2}{\frac{1}{4} \times (\frac{\sqrt{3}}{4})^2} = \frac{2 - \frac{\sqrt{3}}{2} - 3}{\frac{1}{4}} = \frac{-1 - \frac{\sqrt{3}}{2}}{\frac{1}{4}} = \frac{-2 - \sqrt{3}}{\frac{1}{2}} = 2(-2 - \sqrt{3}) = -4 - 2\sqrt{3}$$

ج:
$$(x-2)(x+1)(x+4)(x+7) = (x^2+5x-14)(x^2+8x+4) = -14 \times 8 = -112$$

فرض کرد:
$$\sqrt{(\sqrt{5}-1)^2 \times (4+2\sqrt{5})} = \sqrt{\frac{(\sqrt{5}+1-2\sqrt{5})(4+2\sqrt{5})}{(4-2\sqrt{5})}} = \sqrt{44-20} = \sqrt{14} = \sqrt{2 \times 7} = \sqrt{2}$$

۱



$$x+y=1$$

از طرف: $x+y+z = 2 \cdot \frac{1}{2} = 1$
 $\Rightarrow z=0$

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$$t_3 = -1 \Rightarrow t_1 + 2d = -1$$

$$t_5 = -9 \Rightarrow t_1 + 4d = -9$$

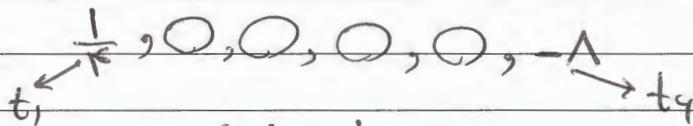
$$\begin{aligned} -2d &= -8 \Rightarrow d = -4 \\ t_1 - 8 &= -1 \Rightarrow t_1 = 7 \end{aligned}$$

$$t_n = t_1 + (n-1)d \xrightarrow[d=-4]{t_1=7} t_n = 7 + (n-1)(-4) = 7 - 4n + 4 = 11 - 4n$$

consider $t_n = -2n + d$

$$-2n + d = -2 \Rightarrow -2n = -2 \Rightarrow n = 1$$

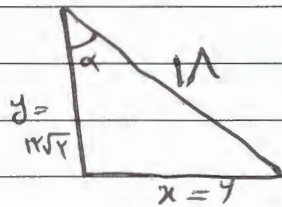
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$$\begin{cases} t_1 = \frac{1}{5} \\ t_6 = -1 \Rightarrow t_1 + 5d = -1 \Rightarrow \frac{1}{5} + 5d = -1 \Rightarrow 5d = -\frac{6}{5} \Rightarrow d = -\frac{6}{25} \end{cases}$$

$$r = -2$$

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$$\sin \alpha = \frac{1}{5} \Rightarrow \frac{y}{11} = \frac{1}{5} \Rightarrow y = \frac{11}{5}$$

$$\begin{aligned} 11^2 &= y^2 + x^2 \Rightarrow 121 = \left(\frac{11}{5}\right)^2 + x^2 \\ 121 &= \frac{121}{25} + x^2 \\ 121 - \frac{121}{25} &= x^2 \\ \frac{121(25-1)}{25} &= x^2 \\ \frac{121 \cdot 24}{25} &= x^2 \\ \frac{11 \cdot 2 \cdot 2 \cdot 3 \cdot 2}{5 \cdot 5} &= x^2 \\ \frac{11 \cdot 2 \cdot 3 \cdot 2}{5} &= x \\ \frac{132}{5} &= x \end{aligned}$$

$$x = 4$$

$$P = 11 + 7 + 11\sqrt{2} = 18 + 11\sqrt{2} = 11(2 + \sqrt{2})$$

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$$y = \tan \alpha x + b \Rightarrow y = \tan \alpha^\circ x + b \Rightarrow y = \sqrt{3}x + b$$

$$\left(\frac{1}{\sqrt{3}}, 1\right)$$

$$1 = \sqrt{3} \cdot \frac{1}{\sqrt{3}} + b \Rightarrow b = 0 \Rightarrow y = \sqrt{3}x$$

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$$9) 1 + \tan^2 \alpha = \frac{1}{\cos^2 \alpha} \Rightarrow 1 + \frac{10}{122} = \frac{1}{\cos^2 \alpha} \Rightarrow \frac{132}{122} = \frac{1}{\cos^2 \alpha} \Rightarrow \cos^2 \alpha = \frac{122}{132}$$

$$\boxed{\cos \alpha = + \frac{11}{11}}$$

$$\boxed{\sin^2 \alpha + \cos^2 \alpha = 1} \Rightarrow \sin^2 \alpha + \frac{122}{132} = 1 \Rightarrow \boxed{\sin \alpha = -\frac{1}{11}}$$

$$10) \text{ مخرج مشترك: } \frac{1 + \cos x - \sin^2 x}{1 + \cos x} = \frac{\cos^2 x + \cos x}{1 + \cos x} = \frac{\cos x (1 + \cos x)}{1 + \cos x} = \boxed{\cos x}$$

$$11) \begin{cases} \text{الف: } \sqrt[11]{\frac{x^k x^4}{x^9}} = \sqrt[11]{\frac{x^k}{x^5}} = x^{\frac{k}{11}} = \boxed{x^{\frac{1}{11}}} \\ \text{ب: } \frac{1}{\sqrt[11]{x+a}} \times \frac{(\sqrt[11]{x^k} - \sqrt[11]{ax} + \sqrt[11]{a^k})}{(\sqrt[11]{x^k} - \sqrt[11]{an} + \sqrt[11]{a^k})} = \boxed{\frac{\sqrt[11]{x^k} - \sqrt[11]{ax} + \sqrt[11]{a^k}}{x+a}} \end{cases}$$

$$12) \begin{cases} \text{الف: } (a-1)(a+1)(a^2+a+1)(a^2-a+1) = (a^2-1)(a^2+1) = \boxed{a^4-1} \\ \text{ب: } a^2 + b^2 - 2ab = \boxed{(a-b)^2} \end{cases}$$

$$13) \begin{cases} \text{الف: } \div 2: x^2 + \frac{1}{2}x - 2 = 0 \Rightarrow x^2 + \frac{1}{2}x = 2 \Rightarrow x^2 + \frac{1}{2}x + \frac{1}{16} = 2 + \frac{1}{16} \\ \text{ب: } \begin{cases} a = -2 \\ b = 8 \\ c = -2 \end{cases} \quad \Delta = 2^2 - 4(-2)(-2) = 1 \\ x = \frac{-8 \pm 1}{-4} \quad \begin{cases} 1 \\ 2 \end{cases} \\ (x + \frac{1}{2})^2 = \frac{29}{16} \Rightarrow x + \frac{1}{2} = \pm \frac{\sqrt{29}}{4} \\ \begin{cases} x = \frac{1}{2} \\ x = -2 \end{cases} \end{cases}$$

$$14) \Delta = 0 \rightarrow b^2 - 4ac = 0 \rightarrow \sum m^2 - (m-1)(m+2) = 0$$

$$\sum m^2 - \sum m^2 - \sum m + 2 = 0$$

$$-\sum m + 2 = 0$$

$$-\sum m = -2$$

$$\boxed{m = 2}$$

ب ب