

نام دبیر: آقای صدیق

تاریخ امتحان:

رشته تحصیلی: ریاضی

ساعت شروع امتحان: صبح

مدیریت آموزش و پرورش منطقه ۱۴

دبیرستان غیر دولتی پسرانه پیام غدیر

پایانی دوم ۹۸-۹۷

پاسخ نامه درس: حساب

ستاد

امتحانات



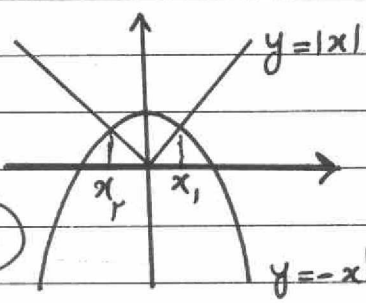
دبیرستان پیام غدیر



$$S_n = \frac{n}{2} (4 + (n-1) \times 3) > 200 \Rightarrow 3n^2 + n - 400 > 0$$

(.۱۵)

$$\Rightarrow n_{\min} = 12$$
 (.۱۵)



$$x_1 = \frac{-1 + \sqrt{5}}{2}$$

(.۱۵)

$$x_2 = \frac{1 - \sqrt{5}}{2}$$

(.۱۵)

$$m_{BC} = \frac{3+1}{-1-3} = -1 \quad BC, m: y - 3 = -1(x+1)$$

$$x + y - 2 = 0$$
 (.۱۵)

$$AH = \frac{|0+1-2|}{\sqrt{1+1}} = \frac{\sqrt{2}}{2}$$
 (.۱۵)

$$S = \alpha^2 + \beta^2 = (\alpha + \beta)^2 - 2\alpha\beta = 1 + 2 = 3$$
 (.۱۲۵)

$$P = \alpha^2 \beta^2 = 1$$
 (.۱۲۵)

$$X^2 - 3X + 1 = 0$$

(.۱۵)

$$D_f = [1, +\infty)$$

$$D_g = \mathbb{R} - \{1/4\}$$

$$D_{f \circ g} \left\{ \begin{array}{l} x \in D_g: x \neq 1/4 \quad (۱) \quad (.۱۲۵) \\ g(x) \in D_f: \frac{1}{2x-1} \geq 1 \Rightarrow \frac{-2x+2}{2x-1} \geq 0 \Rightarrow \frac{1}{4} < x < 1 \quad (۲) \quad (.۱۵) \end{array} \right.$$

$$\frac{1, 2}{0} \rightarrow D_{f \circ g} = \left(\frac{1}{4}, 1 \right]$$
 (.۱۵)



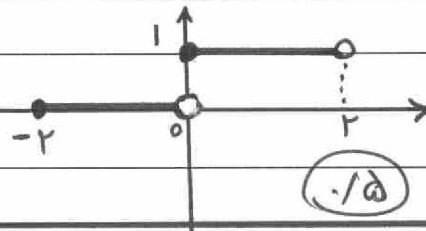
$$y = \frac{x^r}{rx^r - 1} \quad x < 0 \Rightarrow rx^r y - y = x^r \Rightarrow (ry - 1)x^r = y \quad \text{.120} \quad -6$$

$$\Rightarrow x^r = \frac{y}{ry - 1} \Rightarrow |x| = \sqrt{\frac{y}{ry - 1}} \Rightarrow x = -\sqrt{\frac{y}{ry - 1}} \quad \text{.120}$$

$$\Rightarrow f^{-1}(x) = -\sqrt{\frac{x}{rx - 1}} \quad \text{.120}$$

$$1) -2 < x < 0 \Rightarrow y = 0 \quad \text{.120}$$

$$2) 0 \leq x < 2 \Rightarrow y = 1 \quad \text{.120}$$

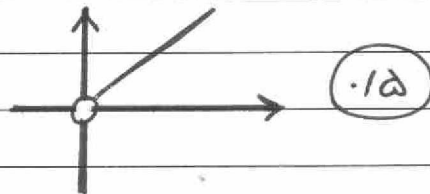


$$\log_{xy} \sqrt{x} = r \Rightarrow \log_{xy} xy = \frac{1}{r} \Rightarrow r \log_{xy} xy = \frac{1}{r} \Rightarrow 1 + \log_x y = \frac{1}{r} \Rightarrow \log_x y = \frac{-r}{r} \quad \text{.120} \quad -7$$

$$\Rightarrow \log_y x = \frac{-r}{r} \quad \text{.120}$$

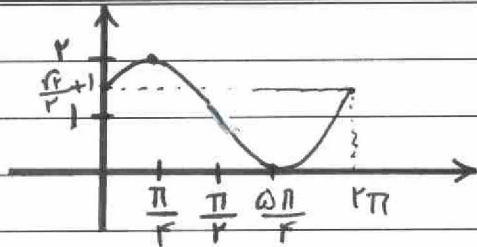
$$1) \frac{x-1}{x} > 0 \quad 2) \frac{x-1}{x} > r \Rightarrow \frac{-x-1}{x} > 0 \Rightarrow -1 < x < 0 \quad \text{.120} \quad -9$$

$$y = r^{\log_r x} = x, \quad x > 0 \quad \text{.120}$$



$$\frac{\pi}{r} = \frac{L_1}{1} \Rightarrow L_1 = \frac{\omega r}{r} = L_r \Rightarrow \theta_r = \frac{L_r}{r} = \frac{\omega r / r}{r} = \frac{\omega}{r} = \pi \text{ rad} \quad \text{.120} \quad -11$$

$$A = \frac{r \cos(\pi - \frac{\pi}{\omega}) + \sin(\frac{\pi}{r} + \frac{\pi}{\omega})}{\cos(r\pi + \frac{\pi}{\omega})} = \frac{-r \cos \frac{\pi}{\omega} + \cos \frac{\pi}{\omega}}{\cos \frac{\pi}{\omega}} = -1 \quad \text{.120} \quad -12$$



۱۳
۱۲۵

$$A = \sin x \cos x (1 - 2 \sin^2 x) = \frac{1}{2} \sin 2x \cdot \cos 2x = \frac{1}{4} \sin 4x = \frac{1}{4} \quad \text{.125} \quad -13$$

$$\lim_{x \rightarrow r^+} ((x-1)[-2x] + [x]) = -3 \quad \lim_{x \rightarrow r^-} ((x-1)[-2x] + [x]) = -3 \quad \text{.15} \quad -14$$

صاف و راست برابرند و وجود دارد. .125

$$\text{الف) } \lim_{x \rightarrow 2} \frac{x^3 - 2x - 4}{\sqrt{x+2} - 2} \times \frac{\sqrt{x+2} + 2}{\sqrt{x+2} + 2} = \lim_{x \rightarrow 2} \frac{(x-2)(x^2 + 2x + 2)x^2}{x+2-4} = 4 \quad \text{.125} \quad -14$$

$$\text{ب) } \lim_{x \rightarrow \frac{\pi}{4}} \frac{\cos x - \sin^2 x}{\sin x - \cos x} = \lim_{x \rightarrow \frac{\pi}{4}} \frac{(\cos x - \sin x)(\cos x + \sin x)}{\sin x - \cos x} = -\sqrt{2} \quad \text{.125}$$

$$\text{ج) } x-1=t \begin{cases} x=t+1 \\ t \rightarrow 0 \end{cases} \quad \lim_{t \rightarrow 0} \frac{t}{\sin(\pi t + \pi)} = \lim_{t \rightarrow 0} \frac{t \times \pi \times \frac{1}{\pi}}{-\sin \pi t} = \frac{-1}{\pi} \quad \text{.125}$$

-14

$$f(1) = a \quad \lim_{x \rightarrow 1^+} \frac{x^2 + x - 2}{|x-1|} = \lim_{x \rightarrow 1^+} \frac{(x-1)(x+2)}{x-1} = 3 \quad \text{.125}$$

$$a = 3 \quad \text{.125}$$

$$-1 + b = 3 \Rightarrow b = 4$$

$$\lim_{x \rightarrow 1^-} [-x] + b[rx] = -1 + b \quad \text{.10}$$