

Subject:

Year. Month. Date. ( )

عنوان پورصیری - تکلیف ۲۴

①  $f'(x) = \frac{1}{x^2}$   $\left| \begin{matrix} a \\ a \end{matrix} \right|_1 \Rightarrow m = \frac{\Delta y}{\Delta x} = \frac{a-1}{a-1} = \frac{a-1}{a-1} = \frac{a-1}{a-1}$  جواب

②  $m = \frac{1}{x}$   $f'(x) = \frac{a}{x^2 \sqrt{ax-1}} = \frac{1}{x} \Rightarrow 2a = 2\sqrt{ax-1} \Rightarrow 9a^2 = 9ax - 9$

$y = \frac{1}{x} \Rightarrow \frac{1}{x} = \frac{1}{x} \Rightarrow \sqrt{ax-1} = \frac{1}{x} \Rightarrow ax-1 = \frac{1}{x^2} \Rightarrow ax^2 - 1 = \frac{1}{x^2} \Rightarrow (ax^2 - 1)x^2 = 1$

$\Rightarrow \frac{1}{4}ax^2 + (\frac{1}{4} - a)x + \frac{14}{9} = 0 \Rightarrow \Delta = 0 \Rightarrow (\frac{1}{4} - a)^2 - \frac{100}{11} = a^2 + \frac{4}{11} - \frac{14}{9}a - \frac{100}{11} = 0$

$\Rightarrow a^2 - \frac{14}{9}a - \frac{100}{11} = 0 \Rightarrow 9a^2 - 14a - 100 = 0 \Rightarrow (a-1)(a+1) \Rightarrow a = 1$  جواب  $f(a) = 1$

③  $m = \frac{x}{y}$   $f'(x) \Rightarrow y' = \frac{(y(x+m)(x+c) - (x^2+mx+1))}{(x+c)^2} \Rightarrow f'(1) = \frac{f(1+m) - (1+m)}{14}$

$\Rightarrow \frac{1+em - 1-m}{14} = \frac{1+m+4}{14e} = \frac{x}{y} \Rightarrow m = 1$   $f(1) = 1 = \frac{1+n}{e} \Rightarrow n = 1$   $n+m = 2$  جواب

④  $f(x) = \frac{9 + \sin^2 x + 2 \sin x}{2 + \sin x} \Rightarrow f'(x) = \frac{2 \sin x \cos x - (2 \sin x + 2 \cos x)}{(2 + \sin x)^2} = -\frac{\sin x}{2 + \sin x}$

$\Rightarrow -\cos x = -\cos(\frac{\pi}{2}) = \frac{-1}{2}$  جواب

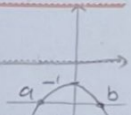
⑤  $f(x) = \frac{1}{\sqrt{\frac{x}{x^2}}} = -x \Rightarrow -1$  جواب

$f(x) = \frac{-1}{\sqrt{2x}}$   $g(x) = \frac{1}{x^2}$

⑥  $f(x) = \frac{\sin^2 x - 2 \sin x + 1}{\sin^2 x + 2 \sin x + 1} = x g(x) + 1 \Rightarrow \frac{\sin^2 x - 2 \sin x + 1 - \sin^2 x - 2 \sin x + 1}{\sin^2 x + 2 \sin x + 1} = g(x)$

$g(x) = \frac{-4 \sin x}{(\sin x + 1)^2} \xrightarrow{\lim_{x \rightarrow 0}} \frac{-4 \sin x}{(1+x)^2} = -4$  جواب

\* ⑦  $f(x) = -x^2 - 1 \Rightarrow f'(x) = -2x \xrightarrow{x=1} -2$



$\left| \begin{matrix} a \\ -a^2-1 \end{matrix} \right| \left| \begin{matrix} b \\ -b^2-1 \end{matrix} \right| - 2a = \frac{1}{rb} \Rightarrow -2ab = 1 \Rightarrow -a^2 - 1 = -b^2 - 1 \Rightarrow b^2 = a^2 \Rightarrow b = -a$

$a^2 + 1 = \frac{1}{2} + 1 = \frac{3}{2}$  جواب

Subject :

Year .      Month .      Date .      ( )

$$\textcircled{1} \quad y = a\sqrt{x} \Rightarrow f'(x) = \frac{1}{\sqrt{x}} (\epsilon x^r + c) + \lambda x (r\sqrt{x}) = a$$

$$f'(x) = \frac{\epsilon x^r + c + 14x^r}{\sqrt{x}} = a\sqrt{x}$$

$$r\sqrt{x}(\epsilon x^r + c) = a\sqrt{x}$$

$$\left. \begin{aligned} 40x^r + 14 &= 14x^r + 4 \\ 12x^r + 14 &\rightarrow n = \frac{1}{3} \end{aligned} \right\}$$

$$a = \sqrt{r} \times r + r \times \sqrt{r} = \boxed{\sqrt{r}} \text{ اطلبه}$$

$$\textcircled{2} \quad y = a\sqrt{x} \quad f'(x) = \frac{1}{\sqrt{x}} (-2x^r + x + 1) - (-\epsilon x + 1)\sqrt{x} = a$$

$$+ \lambda x^r - 2x$$

$$\rightarrow -2x^r + x + 1 - 2x(-\epsilon x + 1) \Rightarrow \frac{4x^r - x + 1}{2\sqrt{x}(-2x^r + x + 1)^r} = a\sqrt{x}$$

$$a\sqrt{x} = \frac{\sqrt{x}}{-2x^r + x + 1} \Rightarrow \frac{1}{2} = \frac{4x^r - x + 1}{2(-2x^r + x + 1)^r} \Rightarrow -\epsilon x^r + 2x + 1 = 4x^r - x + 1$$

$$\left. \begin{aligned} a &\rightarrow \frac{1}{3} \\ \epsilon &\rightarrow \frac{1}{3} \end{aligned} \right\}$$

$$A \Big|_{0, c} \Rightarrow \frac{\sqrt{0, r}}{-0/1 + 0, r + 1} = \boxed{\frac{\sqrt{0, r}}{1, r}}$$

$$\textcircled{10} \quad (f \circ g)' \Rightarrow f'(r) \times g'\left(\frac{\sqrt{a}}{r}\right) \Rightarrow r^m \times \frac{-r}{r\sqrt{a}^2 - 1 \times (m-1)} \Rightarrow 1, r \times \frac{-\sqrt{a}}{\frac{1}{2}} = -\epsilon\sqrt{a}$$

$$[r] = 1 / g\left(\frac{\sqrt{a}}{r}\right) = r$$

$$\frac{-\epsilon\sqrt{a}}{\epsilon\sqrt{a}} = \boxed{\frac{1}{1, r}}$$