

$(r, \omega) \quad f'(r) = ? \quad (r, \omega) = (0, 1) \Rightarrow f'(r) = m = \frac{1 - \omega}{0 - r} = \frac{-2}{-2} = \frac{r}{r}$

سوال 1

$f(x) = \sqrt{ax-1} \quad (-1, 1), (r, r) \quad f(\omega) = ?$

سوال 2

$m = \frac{r-1}{r+1} = \frac{1}{r} \quad \text{نقطه } (r, r) \Rightarrow y-1 = \frac{1}{r}(x+1) \Rightarrow y = \frac{1}{r}x + \frac{r}{r}$

فرض کنیم $\sqrt{ax-1} = \frac{1}{r}x + \frac{r}{r} \Rightarrow \sqrt{ax-1} = x + r \Rightarrow a(ax-1) = x^2 + 2rx + r^2$

$x^2 + (1-9a)x + r\omega = 0 \Rightarrow \sqrt{b^2-4ac} = \sqrt{(1-9a)^2 - 4(r\omega)} = 0 \Rightarrow (1-9a)^2 = 1$

$\Rightarrow \begin{cases} 1-9a=1 \rightarrow a=0 \\ 1-9a=-1 \rightarrow a=2 \end{cases} \Rightarrow f(\omega) = \sqrt{a} = 2$

$y = \frac{x^2 + mx + 1}{x+r}$

سوال 3

$fy - rx = n \Rightarrow fy = n + rx \Rightarrow y = \frac{n}{r} + \frac{r}{r}x \Rightarrow \text{نقطه } (1, 1) = \frac{r}{r}$

$m+n = ?$

$y' = \frac{(rx+m)(x+r) - (x^2+mx+1)}{(x+r)^2} \Rightarrow y'(1) = \frac{(r+m)(1+r) - (1+m+1)}{(1+r)^2} = \frac{r}{2}$

$\Rightarrow f(m+r) - r - m = 1r \Rightarrow m=r \Rightarrow y = \frac{x^2 + rx + 1}{x+r} \xrightarrow{x=1} y=1 \Rightarrow A(1,1)$

نقطه $(1,1) \Rightarrow fy - rx = n \Rightarrow f - r = n \Rightarrow n=1 \quad m+n = r+1 = 2$

سوال 4

$f(x) = \frac{r - \sin^2 x}{a - \sin^2 x}$

$rg'(\frac{\partial \pi}{r}) - f'(\frac{\partial \pi}{r}) = ?$

$g(x) = \frac{r}{r + \sin x}$

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

$\Rightarrow -\cos \frac{\partial \pi}{r} \Rightarrow \left(-\frac{1}{r}\right)$

$$f(x) = -\frac{1}{\sqrt{x+|x|}} \quad g'(\sqrt[r]{r}) f'(g(\sqrt[r]{r})) = ?$$

سؤال 8

$$g(x) = \frac{1}{x^a + |x^a|} \quad (f \circ g)'(x) = g'(x) \times f'(g(x)) \Rightarrow (f \circ g)'(\sqrt[r]{r}) = ?$$

$$\text{في } x > 0 \Rightarrow g(x) = \frac{1}{rx^a} \Rightarrow f(x) = \frac{-1}{\sqrt[r]{rx}} \rightarrow f \circ g(x) = \frac{-1}{\sqrt[r]{\frac{r}{rx^a}}} = \frac{-1}{\frac{1}{x}} = -x$$

$$\Rightarrow (f \circ g)'(x) = -1 \Rightarrow (f \circ g)'(\sqrt[r]{r}) = -1$$

$$f(x) = \left(\frac{-1 + \sin x}{1 + \sin x} \right)^r, \quad f(x) = xg(x) + 1 \quad \lim_{x \rightarrow 0} g(x) = ?$$

سؤال 9

$$\left(\frac{-1 + \sin x}{1 + \sin x} \right)^r = xg(x) + 1 \Rightarrow xg(x) = \left(\frac{-1 + \sin x}{1 + \sin x} \right)^r - 1$$

$$y = x^r + 1$$

سؤال 10

$$\text{عكس } y = -x^r - 1 \Rightarrow \text{نقطة تقاطع } y = -1 \Rightarrow f'(x) \times f'(-x) = -1$$

$$f(x) = -x^r - 1 \Rightarrow f'(x) = -rx$$

$$\Rightarrow (-rx) \times (rx) = -1 \Rightarrow -r^2 x^2 = -1 \Rightarrow x^2 = \frac{1}{r^2} \Rightarrow x = \pm \frac{1}{r}$$

$$\Rightarrow f(x) = f(-x) = -x^r - 1 = -\frac{1}{r^r} - 1 = -\frac{1}{r^r} \Rightarrow y = -\frac{1}{r^r} \Rightarrow$$

القيمة
المطلوبة $\frac{1}{r^r}$

سؤال 11

$$g(x) = \frac{1}{\sqrt{x^r-1}} \Rightarrow g(x) = (x^r-1)^{-\frac{1}{2}} \Rightarrow g'(x) = -\frac{1}{2} (x^r-1)^{-\frac{3}{2}} \times rx \Rightarrow g'(\sqrt[r]{\delta}) = -\frac{r}{2} \sqrt{\delta}$$

$$f(x) = (x[x])^r \xrightarrow{x \rightarrow r^+} [r^+] = r \Rightarrow f(x) = (rx)^r \Rightarrow f(x) = r^r x^r \Rightarrow f'(x) = r^r x^{r-1}$$

$$f \circ g \quad x = \frac{\sqrt{\delta}}{r} \Rightarrow f'(r^+) = r^r$$

$$f'(g(\frac{\sqrt{\delta}}{r})) \times g'(\frac{\sqrt{\delta}}{r}) = r^r \times (-\frac{r}{2} \sqrt{\delta}) = -\frac{r^2}{2} \sqrt{\delta}$$