پارسا انوری

۱- $y'(x) = (2(1+\tan^2)(\tan) - \sqrt{2}\sin) \times f'(\tan^2 + \sqrt{2}\sin)$

$g'(\frac{\pi}{4}) = 3f'_{(2)} = \sqrt{6} \Rightarrow f'_{(2)} = \frac{\sqrt{6}}{3}$ ← پاسخ

۲- $f - 2g = \frac{\cos^2 - 2\cos + 4 - 4}{2-\cos} = \frac{\cos(\cos-2)}{2-\cos} = -\cos x$

$\xrightarrow{'} \sin \xrightarrow{x=7\pi/6} -\frac{1}{2}$ ← پاسخ

۳- $f'_+ = (4x-3)\sqrt{ax}$ عامل صفر شونده $= \frac{4\times\sqrt{a}}{2\sqrt{3a}}$

$= 2\sqrt{3a}$

$f'_- = -(4x-3) = \frac{-4\times\sqrt{a}}{2\sqrt{3a}} = -2\sqrt{3a}$

اختلاف $= 4\sqrt{3a} = 2\sqrt{6} \Rightarrow a = \frac{1}{2}$ ← پاسخ

۴- $2 - 4a + (-a) = -1 \Rightarrow 3 = 5a \Rightarrow a = 3/5 \Rightarrow f'_{4} = -3/5$

۵- $y = \frac{x+5}{7} \Rightarrow m = 1/7 \Rightarrow \frac{1}{7} = \frac{a+3}{9x^2+6x+1}$

$7a + 21 = (3x+1)^2,\ \frac{ax-1}{3x+1} = \frac{x+5}{7} \Rightarrow$

$\Rightarrow 7a^2 - 32a + 16 = 0 \Rightarrow a = 4$ یا $4/7$ ← پاسخ

[illegible]

۶- $f_{(2)} = 8 + 2a - b = 0$

$f'_{(2)} = 12 + a = 0$

$\Rightarrow a = -12 \quad b = -16$

$b - a = -4$ ← پاسخ

۷- [illegible]

$(1-\cos)^m = \frac{x^m}{2^m}$ / [illegible] $\to 2x \times 2 \cdot x^{4n-1-2m}$ ⟶

$\Rightarrow 4n - 1 - 2m = 0 \Rightarrow 2m = 4n - 1$

$2x \times 2^m = 32\sqrt{2} \Rightarrow m = \frac{4n-1}{2} \Rightarrow 2^5 \times 2^{\frac{1}{2}} \Rightarrow m = \frac{7}{2},\ n = 2$

$\Rightarrow 2m + n = 9$ ← پاسخ

۸- $f^{-1}_{(x)} \Rightarrow x = \frac{\sqrt{y}+1}{\sqrt{y}-1} \Rightarrow \sqrt{y} = \frac{x+1}{x-1} \Rightarrow y = \left(\frac{x+1}{x-1}\right)^2 \xrightarrow{\ \prime\ }$

$\xrightarrow{\ \prime\ } 2\left(\frac{(x-1)-(x+1)}{(x-1)^2}\right) \times \left(\frac{x+1}{x-1}\right) \xrightarrow{x=2} -12$ ← پاسخ

۹- $\frac{1-(8-8a)}{1} = -11 \Rightarrow a = -\frac{1}{2} \xrightarrow{x=1}$ [illegible]

$= 8$ ← پاسخ

۱۰- $\frac{f(\pi/2) - f(\pi/4)}{\pi/4} = -\frac{4}{\pi}$

$\frac{f(\pi/4) - f(\pi/2)}{\pi/4} = \frac{4}{\pi}$

$\Rightarrow \frac{-\frac{4}{\pi}}{\frac{4}{\pi}} = -1$