۲۰

پارسا انوری

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

$g(\frac{\pi}{4}) = 3f'_{2} = \sqrt{3} \Rightarrow f'_{(2)} = \frac{\sqrt{3}}{3}$ ← پاسخ ✓ ۲

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

$\xrightarrow{1} \sin \xrightarrow{x = 7\pi/6} -\frac{1}{2}$ ← پاسخ ✓ ۲

۳- $f'_{+} = (4x-3)\sqrt{ax}$ حاصل صفرشونده، $\frac{4 \times \sqrt{a}}{\ldots} = \ldots$

$= 2\sqrt{3a}$

$f'_{-} = -(4x-3) = \frac{-4 \times \sqrt{a}}{\ldots} = -2\sqrt{3a}$ ۲

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

۴- $2 - 4a + (-a) = -1 \Rightarrow 3 = 5a \Rightarrow a = \frac{3}{5} \Rightarrow f'_{4} = -\frac{3}{5}$ ✓ ۲

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

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

$\Rightarrow 7a^2 - 42a + 49 = 0 \Rightarrow a = 47$, $\frac{4}{7}\times$ پاسخ ✓ ۲

۶ـ $f_{(2)} = 8+2a-b=0$ ، $f'_{(2)} = 12+a=0$ $\Rightarrow a=-12 \quad b=-16$

$b-a = -4$ ⇐ پاسخ (۲)

۷ـ $\Rightarrow f' = 2nx^{2n} \Rightarrow f f' = 2n x^{4n-1}$

صورت → $(1-\cos)^m = \frac{x^{2m}}{2^m}$ | مخرج → $2n \times 2 \times x^{4n-1-2m}$ ⟶ (۲)

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

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

$\Rightarrow 2m+n = 9$ ⇐ پاسخ

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

$\xrightarrow{\prime} 2\left(\frac{(x-1)-(x+1)}{(x-1)^2}\right) \times \left(\frac{x+1}{x-1}\right) \xrightarrow{x=2} -12$ ⇐ پاسخ (۲)

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

پاسخ ⟵ 8 (۴)

۱۰ـ $\frac{f(\pi/4)-f(\pi/4)}{\pi/4} = -\frac{4}{\pi}$ ، $\frac{f(\pi/2)-f(\pi/4)}{\pi/4} = \frac{4}{\pi}$ $\Rightarrow \frac{-4/\pi}{4/\pi} = -1$ (۲)