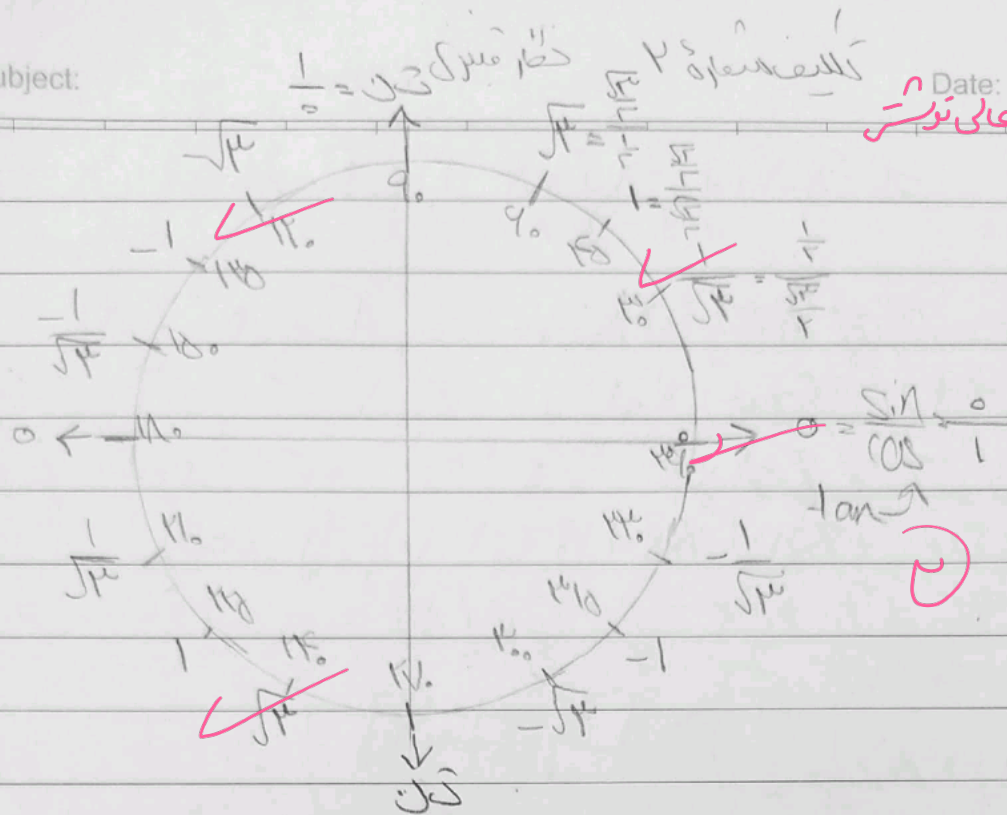


Subject:

Date: 20/11/2019



الف) $\sin \frac{\pi}{4} + \cos \pi + 2 \tan \frac{3\pi}{4} = \frac{1}{2} - 1 - 2 = -\frac{3}{2}$

ب) $-\cos \frac{5\pi}{4} + \sin \frac{\pi}{3} + \sin \frac{\pi}{3} = \frac{\sqrt{2}}{2} + \frac{\sqrt{3}}{2} + \frac{\sqrt{3}}{2} = \frac{\sqrt{2} + 2\sqrt{3}}{2}$

ج) $\cot \frac{\pi}{3} + \cot \frac{\pi}{3} - \tan \frac{5\pi}{4} = -\frac{1}{\sqrt{3}} + \frac{1}{\sqrt{3}} + 1 = 1$

د) $\cos(\sin \pi) + \sin(\pi \cos \frac{\pi}{2}) = 1 + 1 = 2$

$f(x) = \begin{cases} x^2 + 5x & x \geq 1 \\ 5x + 4 & x < 1 \end{cases}$ $\lim_{x \rightarrow 1} f(x) = 1^2 + 5(1) = 6$

$f(1) = 1^2 + 5(1) = 6$

$a_1 \leq a_2 \leq a_3$

$f(x) = \begin{cases} 5x^2 & |x+1| \geq 2 \\ 4+5x & -3 \leq x \leq -1 \end{cases}$ $|x+1| \geq 2 \Rightarrow x+1 \geq 2 \vee x+1 \leq -2 \Rightarrow x \geq 1 \vee x \leq -3$

$\lim_{x \rightarrow -1} f(x) = 4 + 5(-1) = -1$

$a+b=15$

s.a.m

$$b) y = \frac{1}{rx^r + rx^r + rx + r} \neq 0 \quad x^r(r+1) + rx + r \neq 0 \quad D_g = \mathbb{R} \setminus \{-r\}$$

ب) $y = \sqrt{4-x} > 0 \rightarrow x < 4$
 $\sqrt{4-x} > 0 \rightarrow x > \frac{1}{f} \cap \Rightarrow D_{g_2} = (\frac{1}{f}, 4]$

$$\frac{b}{a} = \frac{4}{11} = \frac{1}{f} \quad (2)$$

ج) $y = \frac{x^5 - 9x^2 - 8x + 9}{x^3 + 2x^2 - 8x - 4}$

جمع مضروب $\rightarrow$ $(x-1)$ قسمه

جمع مضروب $\rightarrow$ $(x+1)$ قسمه

جمع مضروب $\rightarrow$ $(x+2)$ قسمه

s.a.m

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$$\int \frac{(x^2)(x^2)}{(x^2)(x^2)} dx$$

$$\frac{-x^2 - 2x + 2x^2}{+ \frac{1}{x} - \frac{1}{x} + \frac{1}{x} - \frac{1}{x} +}$$

C

المعادلة

$$Dg = (-\infty, -1) \cup (-1, 1) \cup (1, +\infty)$$

الف) $y = \sqrt{x^2 - 1} \geq 0 \quad [x] \geq 1 \quad x \geq 1 \quad Df = [1, +\infty)$ (A)

ب) $y = \sqrt{x^2 - 1} \geq 0 \quad [x] \geq \frac{1}{x} \quad x \geq 1 \quad Dg = [1, +\infty)$ C

الف) $y = \sqrt{\frac{x^2 - 1}{x^2}} \geq 0 \quad \frac{x^2 - 1}{x^2} \geq 0 \quad Df = [-1, 1] - \{0\}$ (B)

$$\frac{-1}{-1} + \frac{1}{1} + \frac{-1}{-1} + \frac{1}{1} = 0 \quad \cap \quad x \neq 0$$

ب) $y = \sqrt{[x] - 1} \geq 0 \quad \sqrt{1 - [x]} \geq 0$ Dg = $\emptyset$ C

$$[x] \geq 1 \quad [x] \leq 1$$

$$x \geq 1 \quad \cap \quad x \leq 1$$
