

Subject :

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۱- الف) تابع است ✓

$$\left. \begin{array}{l} y_1^3 - x_1 = 2x_1^2 \\ y_2^3 - x_2 = 2x_2^2 \end{array} \right\} \text{if } x_1 = x_2 \rightarrow y_1^3 = y_2^3 \rightarrow \boxed{y_1 = y_2}$$

معرّف
رابطه

ب) تابع نیست ✗

$$|y| + x^2 = x + 3 \xrightarrow{x=0} |y| = 3 \Rightarrow y < \begin{matrix} 3 \\ -3 \end{matrix}$$

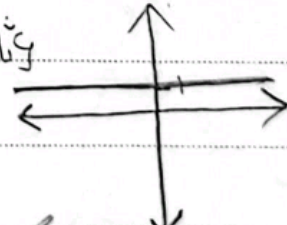
ج) برای اعداد مثبت بد جز ۴ ناممکن است
برای اعداد منفی و صفر نیز ناممکن است.
پس حالتی داریم که $x=4$ و $y=2$ عبارت تابع ✓

د) تابع نیست ✗

$$x = \cos y \xrightarrow{x=0} y < \begin{matrix} 90^\circ \frac{\pi}{2} \\ 270^\circ \frac{3\pi}{2} \end{matrix}$$

۲- الف) ثابت $\Rightarrow$ تابع ثابت

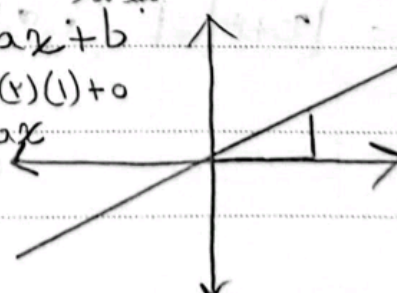
$$y = k$$

$$y = 1$$


ب) مبدأ

$$y = ax + b$$

$$2 = (2)(1) + 0$$

$$y = 2x$$


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$$y = ax + b \xrightarrow{\text{هانی}} x = y \Rightarrow a = 1 / b = 0$$

(۳- الف)

$$a + 2b = 1 + 2(0) = 1$$

$$\frac{-a}{2} = 2 \Rightarrow a = -4$$

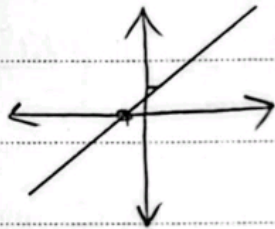
(ب)

$$1 = x^2 - 4x + b \Rightarrow 4 - 1 + b \Rightarrow b = 5$$

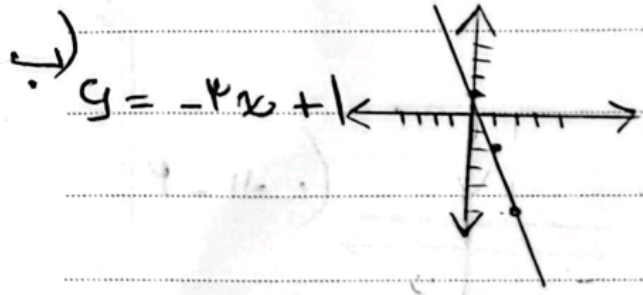
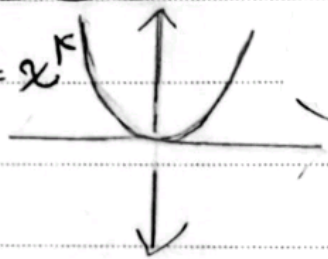
$$a + 2b = -4 + 2(5) = 6$$

(الف)

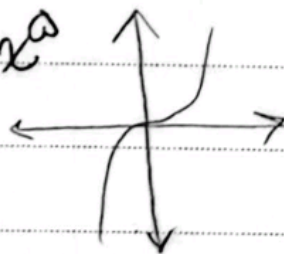
$$y = 2x + 1$$



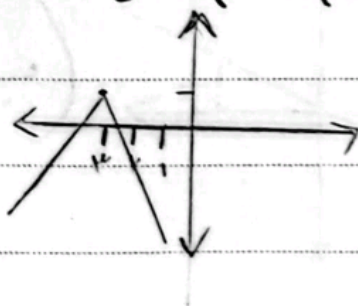
$$(ج) y = x^4$$



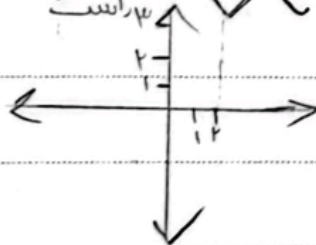
$$(ه) y = x^5$$



$$y = -|x + 3| + 1 \quad (ب)$$



$$y = |x - 2| + 3 \quad (الف - ه)$$



الف) $y = \frac{x+4}{x^2-4x} \Rightarrow x^2-4x \neq 0$ $DF = R - \{0, 4\}$

د مخرج ټيټر صفر ناست

ب) $y = \frac{x+4}{x^2-7x+14} \Rightarrow x^2-7x+14 \neq 0$ $DF = R$

ډول ډلټا منفي
نست نلدار

ج) $y = \frac{x+4}{x^2+x+4} \Rightarrow DF = R$

$\Delta = 1 - 4 \times 1 \times 4$
منفي

د) $y = \frac{x+4}{x^4-4x^2} \Rightarrow x^4-4x^2 \neq 0$

$x^4-4x^2 \Rightarrow x^2(x^2-4) \rightarrow DF = R - \{0, 2, -2\}$

الف) $y = \sqrt{4-x} + \sqrt{x-2} \Rightarrow 4-x \geq 0 \rightarrow 4 \geq x$

$x-2 \geq 0 \rightarrow x \geq 2 \rightarrow (-\infty, 4]$

$[2, +\infty) \rightarrow [2, +\infty)$

$[2, +\infty) \cap (-\infty, 4] \rightarrow [2, 4] = DF$

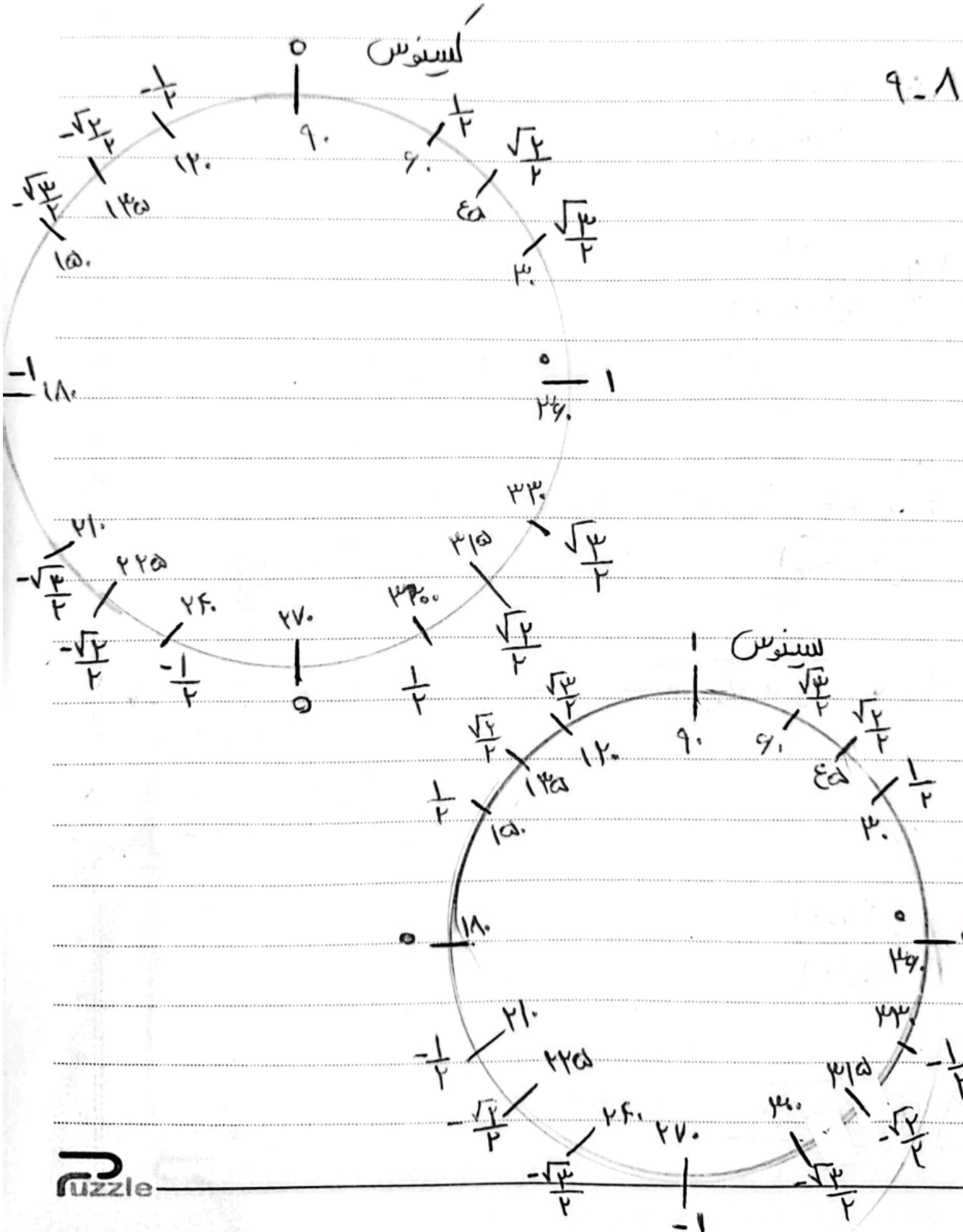
ب) $y = \frac{x^3+1}{x^2+1} \Rightarrow DF = R$

ج) $y = \frac{\sqrt{x-2}}{x-4} \Rightarrow x-2 \geq 0 \rightarrow x \geq 2 \rightarrow [2, +\infty)$

$x-4 \neq 0 \rightarrow R - \{4\}$

$[2, +\infty) - \{4\}$

$$\Rightarrow \frac{2x+3}{|x|+x^2} \Rightarrow |x|+x^2 \neq 0 \xrightarrow{DF} R - \{0\}$$



آرہتیا

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10-الف

$$\frac{120}{3} \rightarrow -\frac{1}{2} \rightarrow +\frac{1}{2} \rightarrow \frac{30}{6} \rightarrow 150 \frac{5}{6}$$

کسیٹوس

$$\frac{11}{6} \rightarrow \frac{\sqrt{3}}{4} \rightarrow -\frac{\sqrt{3}}{4} \rightarrow \frac{24}{3} \rightarrow 3 \frac{5}{3}$$

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