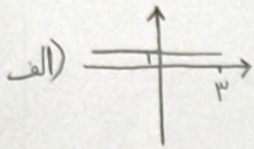


الف) تابع است $y^3 - x = 2x^2$
 $y_1^3 = 2x^2 - x$ $y_2^3 = 2x^2 - x$ $\Rightarrow y_1^3 = y_2^3$
 $y_1 = y_2$

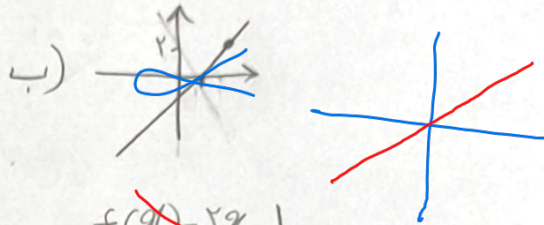
ج) تابع است $\sqrt{x-4} + |y-2| = 0$
 $\sqrt{x-4} = 0 \Rightarrow x = 4$
 $|y-2| = 0 \Rightarrow y = 2$

ب) تابع نیست $|y+2| = x+3$
 $|y_1| = x+3 - x^2$ $|y_2| = x+3 - x^2$
 $|y_1| = |y_2|$
 $\pm y_1 \neq \pm y_2$

د) $x = \cos y$ $0 = \cos y$ 90°
 $\cos y \rightarrow 270^\circ$



$f(x) = 1$



$f(x) = 2x - 1$

$y = ax + b$ $\frac{a=2}{1} \rightarrow y = 2(1) + b \rightarrow b = 0 \rightarrow y = 2x$

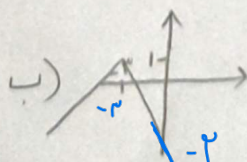
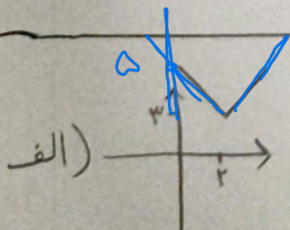
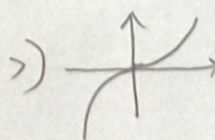
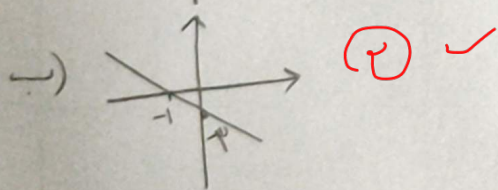
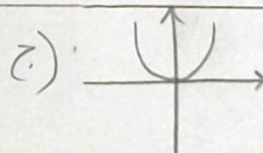
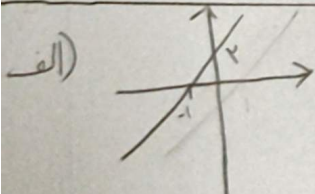
الف) $y = ax + b$ $ax + b = x$ $b = 0$ $a = 1$ $a + 2b = 1 + 2(0) = 1$

ب) $y = x^2 + ax + b$

$x = \frac{-b}{2a} = 2$ $-b = 4a$
 $b = -4a$
 $a + 2b = a + 2(-4a) = a - 8a = -7a$

د) $\frac{-b}{2a} = -\frac{a}{2} = 2 \rightarrow a = -4$

$y = 1 \rightarrow (2)^2 - 4(2) + b = 1 \rightarrow b = 5$
 $a + 2b = -4 + 2(5) = 6$



عرض از بعد اتوبه لن

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الف) $x^2 - 4x > 0$ $x(x-4) > 0$ $D_f = \mathbb{R} - (0, 4)$ خرج باید می‌لف صغریا شد.

ب) $x^2 - 7x + 12 > 0$ $\Delta = 49 - 48 = 1 < 0$ $D_f = \mathbb{R} \quad (-\infty, +\infty)$

ج) $x^2 + x + 1 > 0$ $\Delta = 1 - 4 = -3 < 0$ $D_f = \mathbb{R}$ تعیین علامت نباید

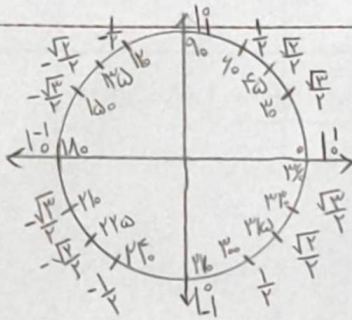
د) $x^2 - 4x > 0$ $D_f = \mathbb{R} - (-2, 0)$ $x^2(x-4) > 0$ $x^2(x-2)(x+2) > 0$ $x=0$ $x=2$ $x=-2$

الف) $y = \sqrt{x-1} + \sqrt{x-2}$ $x-1 \geq 0$ $x-2 \geq 0$ $x \geq 2$ $D_f = [2, \infty)$

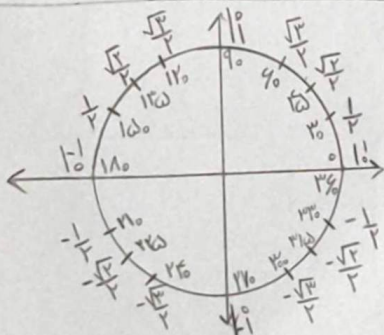
ب) $y = \frac{x^2+1}{x^2+1}$ $x^2+1 \neq 0$ $D_f = \mathbb{R}$ ✓

ج) $y = \frac{\sqrt{x-2}}{x-4}$ $\sqrt{x-2} \geq 0$ $x-2 \geq 0$ $x \geq 2$ $x-4 \neq 0$ $x \neq 4$ $D_f = [2, \infty) - \{4\}$

د) $y = \frac{x^2+3}{|x|+x^2}$ $|x|+x^2 > 0$ $x^2 > -|x|$ $D_f = \mathbb{R} - 0$



✓



✓

الف) $\cos \frac{2\pi}{3} = -\frac{1}{2} \rightarrow \sin \frac{5\pi}{6} = \frac{1}{2}$

✓

ب) $\cos \frac{11\pi}{6} = \frac{\sqrt{3}}{2} \rightarrow \sin \frac{4\pi}{3} = -\frac{\sqrt{3}}{2}$

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