تمرین ۲۷ — ایل ماشاءالله — دهم حرفه‌ای c

(۱)

الف) $3x-y=9 \xrightarrow{\times 2}$ $6x-2y=18$

$x+2y=-4$ $\quad x+2y=-4$

$7x=14 \rightarrow x=2$

$y=-3$

$\frac{x}{y}=-\frac{2}{3}$

ب) $\frac{1}{x}-\frac{1}{y}=-1 \xrightarrow{\times -5} \begin{cases} -\frac{5}{x}+\frac{5}{y}=5 \\ \frac{5}{x}-\frac{7}{y}=-2 \end{cases}$

$\frac{-2}{y}=2 \quad \frac{1}{y}=-1 \Rightarrow y=-1$

$x=-\frac{1}{2}$

$\frac{x}{y}=\frac{-\frac{1}{2}}{-1}=\frac{1}{2}$

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(٢)

$a+1=-2$

$a=-3$

-4

$2a+2b=-4$

$\boxed{b=0}$

(٣)

$m^2-3m=-2$ غير قابل

$m^2-3m+2=0 \Rightarrow m=1$ أو 2

$((m+1),4) \neq (2,4)$ $((m+1),4) \neq (3,4)$

$(2,4) \neq (2,4)$ $(3,4) \neq (3,4)$

مرفوض

(٤)

$y=x^2-a$

(أ) ✗

(ب) ✓

(ج) ✗

(د) ✓ $y=|x|$

(٥)

(أ) $y=-\sqrt{x+1}$ ✓

(ب) $x=\dfrac{y}{\sqrt{1-y^2}}$

$y_1=-y_2$

$\dfrac{y_1^2}{1-y_1} = \dfrac{y_2^2}{1-y_2}$ ✗

$y_1^2-y_2y_1^2=y_2^2-y_1y_2^2$

$y_1(y_1-y_2)=y_2(y_2-y_1)$

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$|y| = x$ if $x=1$ ✗

$y = \pm 1$

✓

ب) $y^3 + 3y^2 + 3y = -x^3 - x$

$y_1^3 + 3y_1^2 + 3y_1 + 1 = y_2^3 + 3y_2^2 + 3y_2 + 1$

$(y_1+1)^3 = (y_2+1)^3$

$y_1 + 1 = y_2 + 1$

$y_1 = y_2$

(۷)

$$\frac{(x+2)^2+1}{(x+2)^2+2} = f(x)$$

$$\frac{2^2+1}{2^2+2} = \frac{5}{4} = \frac{2}{2}$$

(۸)

$x^2 + ax + b = 3x - a$

$-1 - a + b = -2 - a$

$b = -2$

$a \Rightarrow -1 - a - 2 = -5$

$a = +1$

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$x^3 + x - 2 - x^2 + 1 = 0$

$x^3 - x^2 - 1 = 0$

$x^3 + x^2 - x^2 - x - 1 = 0$

$x^2(x+1) - (x+1)^2 = (x+1)(x^2 - x - 1)$

گزینه 1 : جواب

(۹)

$a + b = 2a$

$b = a$

$-a$

$a - 2b + 1 = 2a$

$1 = 2a$

$\boxed{\frac{1}{2} = a}$

(۱۰)

$f(x) = x = \frac{4x^2 - ax + c + 1}{bx + 2}$

$x(bx + 2) = 4x^2 - ax + c + 1$

$bx^2 + 2x \Rightarrow a = -2$, $b = 4$, $c = -1$ $\left(\xrightarrow{+} a + b + c = 0\right)$

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