

سوال 1: $x^2 + 2x = ax - f$ $x=a \rightarrow$

$a^2 + 2a = a^2 - f \rightarrow a = -2$ جواب

سوال 2: $(2, 3) \rightarrow g(x) = f(x) = 3$

$g(2) = 2 + b = 3 \rightarrow b = 1$

$f(x) = \frac{x+a}{x} = 3 \rightarrow x+a = 3x \rightarrow a = 2x$

$f(1) = \frac{1+11}{1+1} = \frac{12}{2} = 6$ جواب

سوال 3: $f(x) = \frac{x+1}{2x^2+ax+b}$ $\mathbb{R} - \{-1, 1\}$
 0 = خارج

$x-a+b=0 / 2x^2+ax+b=0 \rightarrow -3=2a \rightarrow a = -9 / b = -1$

$f(x) = \frac{x+1}{2x^2-9x-1} = \frac{0}{-12} \rightarrow \frac{-0}{12}$ جواب

سوال 4: $f(x) = \frac{x^2 - \sqrt{3}}{-x^2 + ax + b}$ $\mathbb{R} - \{1\}$ $a+b=?$

$-x^2 + ax + b = 0 \rightarrow b = a + f$

$a^2 - 4(-1)(b) = 0 \rightarrow a^2 + 4(a+f) = a^2 + 4a + 4f = (a+2)^2 = 0$

$a+b = -2 - f = -12$ جواب

$a = -2$
 $b = -10$

سوال 5: $f(x) = \frac{2x}{(x-1)(x^2+mx+1)}$ $D: \mathbb{R} - \{1\}$

$\Delta < 0 \rightarrow m^2 - 4 < 0$

$(m+2)(m-2) < 0$
 $(-2, 2)$

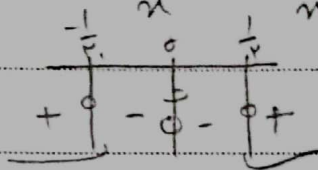
جواب f
 $(-2, 2)$

$$f(x) = \sqrt{x - \frac{1}{x}} \rightarrow x \neq 0$$

∴ 4 Okw

$$\hookrightarrow x - \frac{1}{x} \geq 0 \rightarrow (x + \frac{1}{x}) | (x - \frac{1}{x}) \geq 0$$

$$(-\infty, -\frac{1}{x}] \cup [\frac{1}{x}, +\infty)$$



$$f(x) = \sqrt{mx^2 + 2mx + 1} \quad m \geq 0 \rightarrow f(x) \geq 0$$

∴ 4 Okw

$$m \in [0, +\infty)$$

$$f(x) \begin{cases} \frac{ax^2 - r}{x - 1} : x \neq a \rightarrow a = \frac{1}{r} \\ rx + k : x = \frac{1}{r} \end{cases}$$

∴ 4 Okw

$$g(x) = rx + 1$$

$$f\left(\frac{1}{r}\right) = g\left(\frac{1}{r}\right)$$

$$a + k = \frac{1}{r} \rightarrow a = \frac{1}{r}$$

$$r + k = r \rightarrow k = 0$$

$$f(x) \begin{cases} \frac{9x^2 - r}{4x + r} : x \neq -\frac{r}{4} \rightarrow \frac{(4x + r)(4x - r)}{4x + r} \rightarrow 0 \\ 4x + r : x = -\frac{r}{4} \end{cases}$$

∴ 4 Okw

$$g(x) = 4x + b$$

$$g\left(-\frac{r}{4}\right) = f\left(-\frac{r}{4}\right)$$

$$g\left(-\frac{r}{4}\right) = f\left(-\frac{r}{4}\right)$$

$$r + b = 0 \rightarrow b = -r$$

$$-r + b = -ra + r$$

$$a - b = -1 + r = 1 \rightarrow \text{جواب}$$

$$ra = r \rightarrow a = 1$$

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Subject: ()

Date:

$$f(x) \begin{cases} \frac{x^p - f}{x - p} & : x \neq p \\ pa^p + ax & : x = p \end{cases} \quad g(x) = x + p \quad : \text{سوال 10}$$

$$g(p) = p \rightarrow pa^p + pa = p \rightarrow \boxed{a = 1}$$