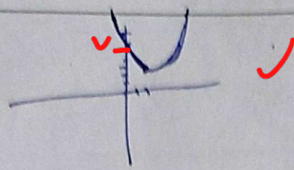


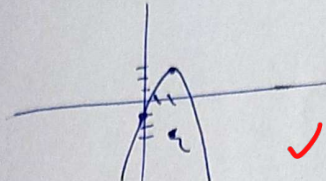
۱۶، ۷۵

$$\frac{-b}{2a} \leq x \rightarrow y_3 \leq x$$



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$$b) \rightarrow \frac{-4}{-2} \leq x \rightarrow y_3 \leq -5 + 8x + x^2$$



$$b^2 - 4ac$$

$$m^2 - 2m - 15 > 0$$

$$\frac{-3}{1} \frac{5}{1}$$

$$(m+1)^2 \left(\frac{1}{m+2} \right) \left(\frac{1}{m+2} \right) > 0 \Rightarrow (m+1)^2 (-4m-14) > 0$$

$$\frac{-4}{1} \frac{-14}{1} \Rightarrow m \in (-\infty, -4) \cup (-1, +\infty)$$

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$$(m+1)^2 (-4m-14) = 0 \quad m \in \{-4, -1\} \quad \{-3, 5\}$$

$$(m+1)^2 (-4m-14) < 0 \Rightarrow m \in (-4, -1) \cup (-1, +\infty) \quad -3 < m < 5$$

$$(m+1)^2 (-4m-14) > 0 \Rightarrow m \in (-\infty, -4] \quad m \geq 5$$

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$$\frac{m^2 - 2m - 15}{m - 2} < 0 \Rightarrow \frac{-1}{1} \frac{2}{-5} \quad \Delta = (-2m - 2)^2 - (4m + 14) = 4m^2 + 16m + 4 - 4m - 14 = 4m^2 + 12m - 10$$

$$\Delta = 4(m^2 + 3m - 2.5) \Rightarrow \Delta < 0 \Rightarrow m \in (-1, 2) \quad \checkmark$$

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$$\Rightarrow a < 0 \Rightarrow m - 2 < 0 \Rightarrow m < 2$$

$$c) \frac{-b}{2a} = -2 \Rightarrow \frac{b}{2a} \leq x \Rightarrow \frac{-2m-2}{2m-4} \leq x \Rightarrow -2m-2 = 4m-8 \Rightarrow 4m=6 \Rightarrow m=1.5 \quad \checkmark$$

۲

$$\{ \sin^2 \alpha - \cos^2 \alpha = 0 \} \Rightarrow \sin^2 \alpha = 1 \Rightarrow \sin \alpha = \pm 1$$

$$\sin^2 \alpha \in [0, 1]$$

$$-1 \rightarrow x = \frac{-b}{2a} = -2$$

$$\frac{-b \pm \sqrt{\Delta}}{2a} \Rightarrow \frac{-b}{2a} = \frac{-2}{2} = -1 \quad \frac{-b}{2a} \leq \frac{2}{2} = 1 \quad \checkmark$$

$$\frac{(n-1)(n+1)(n-0)(n+1)}{-10(1-n)(1+n)} = -9n^2 + 10n + 0$$

$$n_5 = \frac{-10}{-10} \pm \frac{10}{10} \Rightarrow \left(\frac{10}{10}\right)^2 + 10 \times \frac{10}{10} + \dots = -\frac{100}{10} + \frac{100}{10} + \frac{100}{10} = \frac{100}{10} + \frac{100}{10} = \frac{200}{10} \checkmark$$

(2)

$$y_5 = 0p + v$$

$$\frac{y_{m+1}}{m} = \frac{-1 + v_m}{m} \Rightarrow \epsilon_m = 1 \Rightarrow m = \epsilon \Rightarrow \epsilon_m^2 - y_m - \epsilon = 0 \Rightarrow (\alpha + \beta)^2 - 2\alpha\beta = \alpha^2 + \beta^2$$

$$\left(\frac{9}{\epsilon}\right) + 1 = \alpha^2 + \beta^2 = \left(\frac{13}{\epsilon}\right)$$

(1, 4)

$$an^2 + bn + c \Rightarrow \epsilon a + 2b + c = \epsilon \Rightarrow \epsilon a + b = 0$$

$$\Rightarrow 9a - 2b + c = \epsilon \Rightarrow 9a - 2b = \epsilon \Rightarrow a = \frac{b}{c}$$

$$n^2 + cn + c \Rightarrow \text{جواب} = \frac{-b}{2a} = \frac{-c}{2} \checkmark$$

سوال 9

(2)

$$B^2 - 0B + 2 = 0$$

$$\alpha \cdot \beta = 2 \Rightarrow \beta = \frac{2}{\alpha}$$

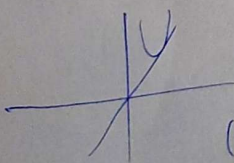
$$\frac{0 \cdot \frac{2}{\alpha}}{0 \cdot \frac{2}{\alpha}} + \frac{0}{0 \cdot \frac{2}{\alpha}} = \frac{\alpha^2}{0} + \frac{\beta^2}{0} = \frac{\alpha^2 + \beta^2}{0} = \frac{90}{0} = 19 \checkmark$$

$$\frac{\alpha^2 + \beta^2}{0} = (\alpha + \beta)^2 - 2\alpha\beta = 100 - 4 = 96$$

سوال 1

(2)

$$m + 4 > 0 \Rightarrow m > -4$$



$$\Rightarrow \Delta > 0$$

$$(m+1)^2 - 4(m+1) = m^2 + 2m + 1 - 4m - 4 = m^2 - 2m - 3$$

$$29 + 188 = 217 \Rightarrow 217 = 14 \times 15.5 = 2 \times 10.5 \Rightarrow \sqrt{217} = 14.5$$

$$\frac{9 \pm \sqrt{14}}{2} = 2 \pm \sqrt{14}$$

$$\frac{2 \pm \sqrt{14}}{2} = 1 \pm \sqrt{14}$$

1.

١٠ تابع را با خط $y = x$ قطع داده و $\Delta = 0$ قرار می دهیم :

$$2x^2 + (m+1)x + m + 4 = x \rightarrow 2x^2 + mx + m + 4 = 0$$

$$\underline{\Delta = 0} \rightarrow m^2 - 4(m+4) = 0 \rightarrow \begin{cases} m = 12 \rightarrow \text{ناحیه سوم} \times \\ m = -4 \rightarrow \text{ناحیه اول} \checkmark \end{cases}$$