

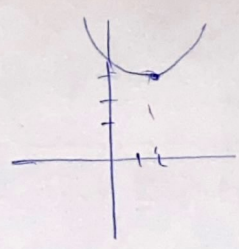
درس صادق

سوال

الف) $y = x^2 - 4x + 7$

$x_{min} = \frac{-b}{2a} = 2$

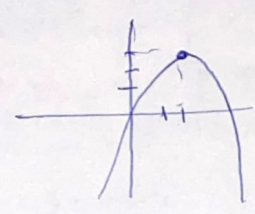
$y_{min} = 3$



ب) $y = -x^2 + 4x - 1$

$x_{max} = \frac{-b}{2a} = 2$

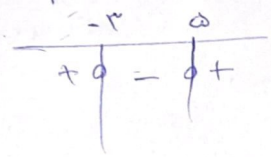
$y_{max} = 3$



$g = 2m^2 + (m+1)m + \frac{1}{2}m + 2 = 0$

سوال ۲

الف) $\Delta > 0 \quad (m+1)^2 - 4 \times 2 \times (\frac{1}{2}m + 2) = m^2 + 1 + 2m - 4m - 16 = m^2 - 2m - 15 > 0$



$(m-5)(m+3) > 0$

$m = 5, -3$
 $m \in (-\infty, -3) \cup (5, +\infty)$

ب) $\Delta = 0 \quad m \in [-3, 5]$

ج) $\Delta < 0 \quad m \in (-3, 5)$

د) $\Delta \geq 0 \quad m \in [-3, 5]$

$g = (m-2)x^2 - 2(m+1)x + 10$

سوال ۳ $S < 0 \rightarrow \frac{2m+2}{m-2} < 0 \rightarrow \frac{-1}{1-\frac{1}{m}} \rightarrow m \in (-1, 2)$

$P > 0 \rightarrow \frac{10}{m-2} > 0 \rightarrow m \in (2, +\infty)$

$\Delta > 0 \rightarrow (2m-2)^2 - 4(m-2) \times 10 = 4m^2 + 4 + 16m - 40m - 40 = 4m^2 - 24m - 36 > 0$

$m^2 - 6m - 9 > 0$

$m^2 - 8m + 21 > 0$

$\Delta < 0$

که اکثر آن ها صافی است

موازی برقرار

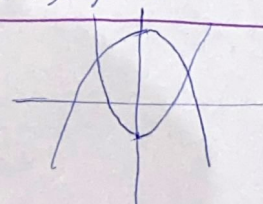
ب) $|-a| > |b| \quad \Delta > 0 \rightarrow$ همواره برقرار

$P < 0 \rightarrow \frac{10}{m-2} < 0 \rightarrow m < 2$ ①

$S < 0 \rightarrow m \in (-1, 2)$ ② $\rightarrow m_2 = (-1, 2)$

$g = (m-2)x^2 - 2(m+1)x + 10$

$\Delta > 0 \quad P < 0$



سوال ۴

$(-2m-2)^2 - 4(m-2) \times 10 = 4m^2 + 4 + 16m - 40m - 40 = 4m^2 - 24m - 36 > 0$

$\frac{10}{m-2} < 0 \rightarrow \frac{1}{1-\frac{1}{m}} < 0 \rightarrow m < 2$

همواره برقرار

سوال ۹

$$\frac{-b}{2a} = \frac{r_{m+1}}{r_m - 1} = \frac{m+1}{m-1} = -1 \rightarrow -r_m + 1 = m+1 = r_m = 2 \rightarrow m = 1$$

$$g = \frac{r}{2} r^2 - (r \sin \alpha) r + \frac{r}{2} = 0$$

سوال ۵

$$\Delta \geq 0 \quad r \sin^2 \alpha - 4 \times \frac{r}{2} \times \frac{r}{2} \rightarrow r \sin^2 \alpha - 4 \geq 0 \rightarrow r \sin^2 \alpha \geq 4$$

$$\sin^2 \alpha = 1 \rightarrow \sin \alpha = \pm 1 \quad \begin{cases} \sin = 1 \rightarrow \frac{r}{2} r^2 - 2r + \frac{r}{2} = 0 \\ \Delta = 4 - 4 = 0 \rightarrow r = \frac{2 \pm 0}{1} = 2 \\ \sin = -1 \rightarrow \frac{r}{2} r^2 + 2r + \frac{r}{2} = 0 \rightarrow \Delta = 4 - 4 = 0 \rightarrow r = \frac{-2 \pm 0}{\frac{1}{2}} = -4 \end{cases}$$

$$\frac{(m+1)(r_{m-1}) - (r_{m-1})(r_{m+1})}{(r_m^2 - r_{m-1})(r_m^2 - r_{m+1})} = \frac{(r_m)(r_{m+1})(r_{m-1})(r_{m+1})}{(1 - r_m^2)(r_m^2)} = r_{m+1} + r_{m-1}$$

$$\frac{-6r + 4ac}{4a} = \frac{-14r - 4}{-4} = \frac{14r + 4}{4}$$

$$m r^2 - (m+1)r - 2 = 0 \quad r(\alpha + \beta) = \Delta(\rho \alpha) + V$$

$$\frac{m+1}{m} \quad \frac{-r}{m} \rightarrow \frac{-1}{m} + V = \frac{-1 + 14m}{m}$$

$$\frac{r_{m+1}}{m} = \frac{-1 + 14m}{m} \rightarrow r_{m+1} = -1 + 14m - 2 \quad r_{m+1} = 14m - 3 \rightarrow m = 1$$

$$\alpha^2 + \beta^2 = S^2 - 2P = \left(\frac{r}{2}\right)^2 - 2\left(-\frac{1}{r}\right) = \frac{r^2}{4} + 1 = \frac{14}{r}$$

$$r^2 - 2r + 2 = 0 \quad \frac{4a \pm \sqrt{b^2 - 4ac}}{2a}$$

۱۸

$$S = \alpha + \beta = \alpha = \alpha - \beta \quad \beta^2 - 2\beta + 2 = 0 \quad \beta^2 = 2\beta - 2 \quad \Delta \beta^2 = 2\beta - 2$$

$$\beta^2 = (2\beta - 2)^2 \rightarrow \beta^2 = 4\beta^2 - 8\beta + 4 \rightarrow 12\beta - 4 = 0 \rightarrow \beta = \frac{1}{3}$$

$$\beta^2 = 12\beta - 4 \rightarrow \beta = \frac{12\beta - 4}{\beta} \rightarrow \beta^2 = 12\beta - 4 \rightarrow 12\beta - 4 = \beta^2 \rightarrow 12\beta - 4 - \beta^2 = 0$$

$$\frac{4(12\beta - 4) - 4(12\beta - 4)^2}{4(12\beta - 4)} = \frac{4(12\beta - 4) - 4(144\beta^2 - 96\beta + 16)}{4(12\beta - 4)} = \frac{4(12\beta - 4) - 576\beta^2 + 384\beta - 64}{4(12\beta - 4)} = 19$$

$$\Delta \geq 0 \quad f \sin^2 \alpha - f \times \frac{r}{r} \times \frac{r}{r} \rightarrow f \sin^2 \alpha - f \geq 0 \rightarrow f \sin^2 \alpha \geq f$$

$$\sin^2 \alpha \geq 1 \rightarrow \sin \alpha = \pm 1$$

$$\begin{aligned} \sin \alpha = 1 &\rightarrow \sin \alpha = \pm 1 \\ \sin \alpha = -1 &\rightarrow \sin \alpha = \pm 1 \end{aligned}$$

$$\Delta = f^2 - f = 0 \rightarrow m = \frac{r + \sqrt{r^2 - f^2}}{f} = \left[\frac{r}{f} \right]$$

$$g = ar^2 + br + c$$

$$fa + 2b + c = 1f$$

$$fa - 2b + c = f$$

$$g_r = 2r + 10$$

$$a = 2 \rightarrow g = 1f$$

$$a = -2 \rightarrow g = f$$

$$\frac{-b}{2a} = -\frac{r}{2}$$

(سوال ۹)

$$\begin{cases} a+b=5 \\ 2a-b=0 \end{cases}$$

$$3a=5 \rightarrow a=1, b=4$$

$$g = 2r^2 + (m+1)r + m + 4$$

$$\Delta = 0$$

$$g = a \rightarrow a = 2r^2 + (m+1)r + m + 4 \rightarrow 2r^2 + mr + m + 4 = 0$$

$$m^2 - f \times (m+4) = m^2 - 4m - 4f = 0 \rightarrow (m-12)(m+4) = 0$$

$$m = 12, -4$$

(سوال ۱۰)

$$\frac{x \cdot y}{a \cdot b} = \frac{20}{3}$$

$$3 = f \vee g, 3 - 21$$

$$\frac{\beta - \alpha}{3 - 1} = \frac{12(21)}{22}$$