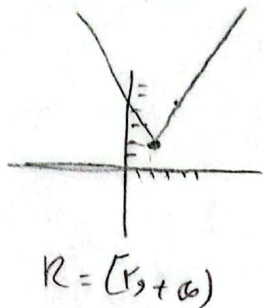


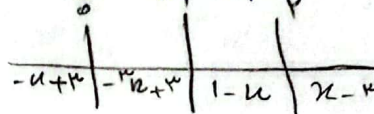
IV, VO

الف) $y = x + |2x - 4| \Rightarrow$

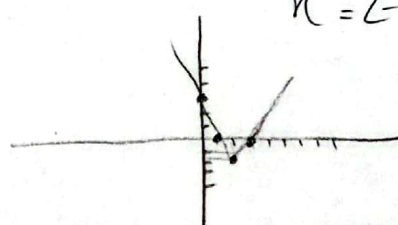
$$\left\{ \begin{array}{ll} \mu_n - \varepsilon & x > r \\ \mu & x = r \\ -\mu + \varepsilon & x < r \end{array} \right.$$



$$b) \quad y = |x-2| + |x-1| + |x|$$



$$K = [-1, +\infty)$$



$$|u - v| - |u + v| = K \longrightarrow |u - v| = K + |u + v|$$

$$9k^2 + 9 - 12k = k^2 + 6k + 9$$

$$100^2 + 100(200 - 100) - (100^2 + 100 \times 100 - 5000) = 0 \quad \xrightarrow[\Delta = 0]{\text{يب جواب}} (200 - 100)^2 + 200(100^2 + 100 \times 100 - 5000) = 0$$

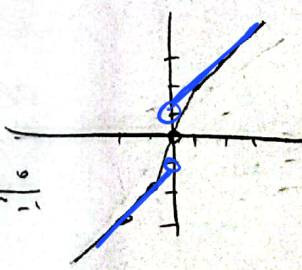
$$\cancel{r_{AE}} + \cancel{\beta_{KE}} + \cancel{\alpha_{KE}} + \cancel{\gamma_{KE}} + \cancel{1\%} - 1\% = 0 \Rightarrow \gamma_{KE} + \gamma_{SE} + \gamma_{\Sigma} = 0 \quad \therefore \underline{\underline{\gamma_{\Sigma}}}$$

$$qk^r + \omega^s k + 11 = \dots \rightarrow k^r + \omega^s k + \nu r q \rightarrow (r + \nu)^r$$

$$u = \frac{-rv}{q} \Rightarrow (-rv)$$

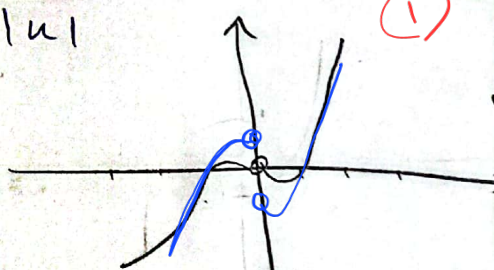
$$\text{الف) } x + \frac{x}{111}$$

$$\left\{ \begin{array}{ll} x \geq 0 & x+1 \quad \frac{1 \quad 1 \quad 0}{1 \quad 1 \quad 1} \\ x < 0 & x-1 \quad \frac{-1 \quad -1 \quad 0}{1 \quad -1 \quad -1} \end{array} \right.$$

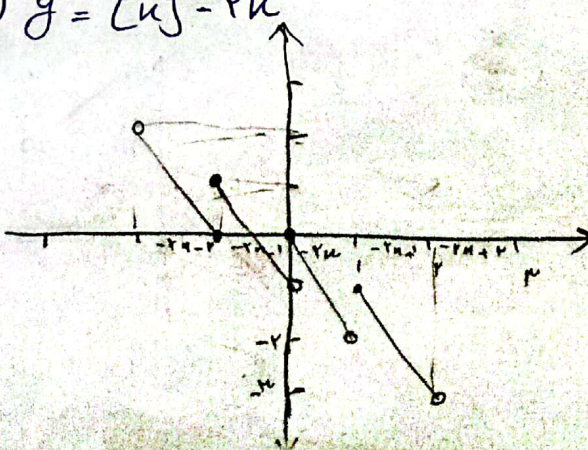


c) $u|u| = \underline{u}$

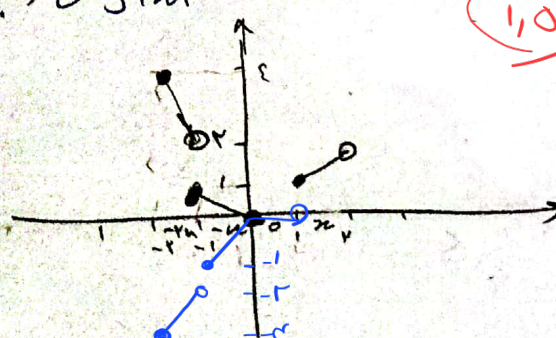
$$\begin{cases} u > -u^{r-1} \\ u < -u^{r-1} \end{cases} \quad |u|$$



الف) $y = [u] - 2u$



ب) England



الف) $y = 3x - [2x] \rightarrow [0, 1]$ ب) $4x - [x] \rightarrow [0, 4]$ ج) $x - 2\left[\frac{x}{2}\right] \rightarrow [0, 2]$ (5)

د) $[2x] - 2x \rightarrow [-1, 0]$

الف) $3\sin x + 4\cos x \rightarrow \sqrt{13} \leq 3\sin x + 4\cos x \leq \sqrt{13}$ ب) $5\sin x - 3\cos x \rightarrow -5 \leq 5\sin x - 3\cos x \leq 5$ (6)

ج) $[3\sin x + 2\cos x] \rightarrow -\sqrt{13} \leq 3\sin x + 2\cos x \leq \sqrt{13}$ د) $\sqrt{\cos x - 2\sin x} \rightarrow -\sqrt{5} \leq \cos x - 2\sin x \leq \sqrt{5} \rightarrow [-5, 5]$ (5)

الف) $\sin^2 x + 3\sin x + 2$ (1, 1.5)

ب) $2\sin^2 x + 3\sin x + 2$ (1, 1.5)

ج) $\frac{1}{2} \leq \sin^2 x + \cos^2 x \leq 1$ (5)

الف) $\sin^2 x + 3\cos^2 x \rightarrow 1 - \cos^2 x + 3\cos^2 x \rightarrow 1 + 2\cos^2 x \rightarrow [1, 3]$ (1)

ب) $\frac{2\cos x}{1 + \cos^2 x} \rightarrow \frac{2\cos x}{\frac{1}{\sin^2 x}} \rightarrow 2\cos x \sin^2 x = \sin 2x \rightarrow [-1, 1]$ (5)

الف) $y = \sin^2 x + \cos^2 x$ (4)

ب) $[\sin^2 x + \cos^2 x] \rightarrow \frac{1}{2} \leq \sin^2 x + \cos^2 x \leq 1$ (5)

ج) $\frac{x^2 - 1}{x - 1} \rightarrow (x + 1) \rightarrow [2, 3]$ (1, 1.5)

الف) $y = \frac{x^2 + 2x - 3}{x + 1} \rightarrow \frac{(x-1)(x+3)}{x+1} \rightarrow [-4, 2]$ (1, 1.5)

ب) $\frac{x^2 - 1}{x - 1} \rightarrow (x + 1) \rightarrow [2, 3]$ (5)

ج) $\frac{x^2 - 1}{x - 1} \rightarrow (x + 1) \rightarrow [2, 3]$ (1, 1.5)