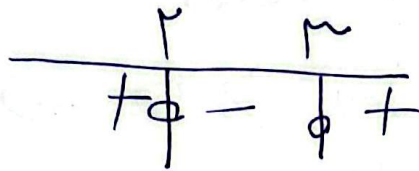


سبحان مشکی

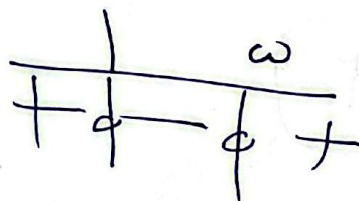
الف) $(x-2)(x-3)$

$(-\infty, 2] \cup [3, +\infty)$



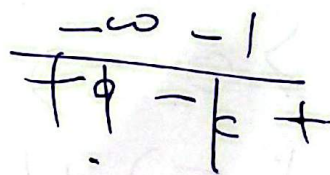
ب) $(x-1)(x-5)$

$(-\infty, 1] \cup [5, +\infty)$



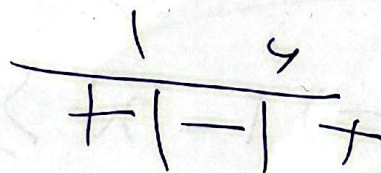
ج) $(x+1)(x+5)$

$(-\infty, -2] \cup [-1, +\infty)$



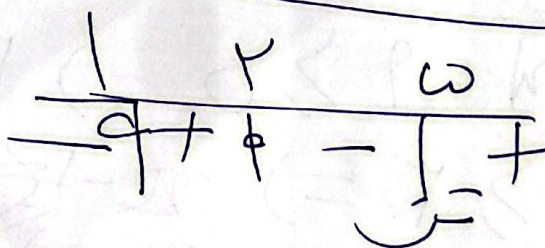
د) $(x-1)(x-4)$

$(-\infty, 1] \cup [4, +\infty)$



الف) $(x-1)(x-2)$

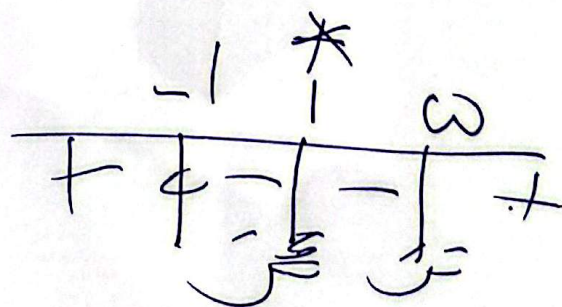
$(1, 2)$ and $(-\infty, 1)$



ب) $x^2 - 1$

$x^2 - 4x + 4$

$(-\infty, -1] \cup [1, +\infty)$



الف) $\frac{-1}{+} \frac{+}{+} \frac{+}{+} \frac{+}{+} \quad A = \{-1, 0, 1\}$ ③

ب) $\frac{-1}{+} \frac{+}{-} \frac{+}{+} \frac{+}{+} \quad (1, +\infty) \cup (1, 2) \cup (-\infty, -1]$ ⑤

الف) $2 - x \geq 0 \Rightarrow x \leq 2$

$2 - \sqrt{2-x} \geq 0 \Rightarrow \sqrt{2-x} \leq 2 \Rightarrow 2-x \leq 4 \Rightarrow x \geq -2$

$2-x \leq 4 \Rightarrow x \geq -2$

$-2 \leq x \leq 2$

ب) $x - 2 \geq 0 \Rightarrow x \geq 2$

$2 - \sqrt{x-2} \geq 0 \Rightarrow 2 \geq \sqrt{x-2} \Rightarrow$

$4 \geq x-2 \Rightarrow 11 \geq x \Rightarrow 2 \leq x \leq 11$

الف) $x - 2x^2 \geq 0 \Rightarrow 2 - x^2 \geq 0 \Rightarrow 2 \geq x^2$ ④

$\sqrt{2} \geq x$

ب) $2|x| - 9 \geq 0 \Rightarrow 2|x| \geq 9 \Rightarrow$

$|x| \geq \frac{9}{2} \Rightarrow x \in (-\infty, -\frac{9}{2}] \cup [\frac{9}{2}, +\infty)$

ايف $|x - 3| \neq 0 \Rightarrow |x| = 3 \Rightarrow x = 9 - 3$ (C)

$x = 9 - 3$

$\therefore \sqrt{x} - 3 \neq 0 \Rightarrow \sqrt{x} = 3 \Rightarrow x = 9$

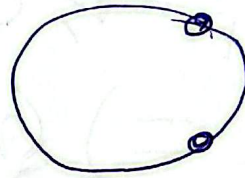
$x = 9$ ~~$x = 9$~~ ~~$\sqrt{x}$~~

$x = (9 + \infty) - 9$

ايف $2 \cos x - 1 \neq 0 \Rightarrow \cos x = 1 \Rightarrow \cos x = 1$

$x = 99^\circ$

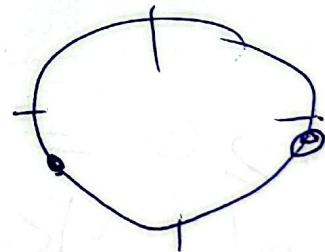
$R - \{180^\circ + \frac{\pi}{3}\}$



$\therefore \sin x \neq 1 \Rightarrow \sin x = \frac{1}{2} \Rightarrow$

~~90°~~ 30° 150° 210° 270°

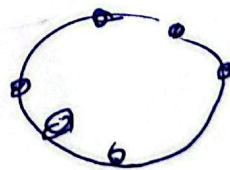
$R - \{180^\circ - \frac{\pi}{6}, 180^\circ + \frac{\pi}{6}\}$



ايف $\cos = 0 \Rightarrow 90^\circ$ 270°
 $\sin = 0 \Rightarrow 180^\circ$ 0°

$\cot x = 1 \Rightarrow \cot x = 45^\circ$ 135°

$R - \{180^\circ - \frac{\pi}{4}, 180^\circ + \frac{\pi}{4}\}$



$$\Rightarrow \sin^2 m = r^2 \Rightarrow \sin^2 = \frac{r^2}{m^2} \Rightarrow$$

$$\sin = \frac{\sqrt{r}}{m} \Rightarrow 0, 1$$

$$R = \left\{ km + \frac{m}{m} \right\}$$

$$y = \sqrt{r|m-1|} - \frac{1}{m}$$

9

$$r|m-1| - \frac{1}{m} \geq 0 \Rightarrow r|m-1| \geq \frac{1}{m}$$

$$|m-1| \geq \frac{1}{r} \Rightarrow m \geq \frac{1}{r} + 1$$

$$R = \left\{ \frac{1}{r}, 1, \frac{1}{r} \right\}$$

$$r - r|m| \geq 0 \Rightarrow r \geq r|m| \Rightarrow$$

10

$$r \geq |m| \Rightarrow -r \leq m \leq r$$

$$\Rightarrow \sqrt{\frac{|m|}{|m|}} \Rightarrow R = \{0\}$$