

$$(a + rn)$$

$$-\frac{1}{2} \times 1 = -1$$

V)

20

سؤال ٢) $\sin \frac{\pi}{4} + \cos \frac{\pi}{4} + r \tan \frac{\pi}{4} = \frac{1}{\sqrt{2}} + (-1) + (-\sqrt{2}) = \frac{1-\sqrt{2}-\sqrt{2}}{\sqrt{2}} = \frac{1-2\sqrt{2}}{\sqrt{2}}$

ب) $-\cos \frac{\pi}{4} + \sin \frac{\pi}{4} - r \sin \frac{\pi}{4} = \frac{-\sqrt{2}}{\sqrt{2}} + \frac{\sqrt{2}}{\sqrt{2}} + \frac{-\sqrt{2}}{\sqrt{2}} = \frac{-\sqrt{2}}{\sqrt{2}}$

ج) $\cot \frac{\pi}{4} + r \cot \frac{\pi}{4} - r \tan \frac{\pi}{4} = 1 + \sqrt{2} - \sqrt{2} = 1$

د) $\frac{\sqrt{2}}{\sqrt{2}} + \sqrt{2} = \frac{\sqrt{2} + \sqrt{2}}{\sqrt{2}} = \frac{2\sqrt{2}}{\sqrt{2}} = 2$

هـ) $\cos(\sin \frac{\pi}{4}) + \sin(\pi \cos \frac{\pi}{4}) = 1 + 1 = 2$

سوال (۳)

$$x^2 + px = ym + a + y - m = a$$

$$a^2 + pa = ya + a + y$$

$$a^2 + a - y = 0$$

$$(a+y)(a-1) = 0$$

جواب (۵)

$$1 + \frac{1}{x} = \frac{1}{y}$$

$a = -y$
 $a = 1 \rightarrow a > 0 \rightarrow a = 1$
 $n = 1$

$m = -y$
 $1n - b = a - y$
 $2y = a + b$

الف) $\frac{1}{x^3 - 4x^2} \neq 0 \rightarrow x^2(x-4) \neq 0$
 $x \neq 0, 4$
 سوال (۵)
 $R - \{0, 4\}$

ب) $\frac{1}{2m^3 + 4m^2 + 2m + 1} \neq 0$
 $2m^2(m+2) + 2(m+1) \neq 0 \rightarrow (m+2)(2m^2+2) \neq 0$
 $\rightarrow R - \{-2, -1\}$

الف) $\sqrt{x^2-1} + \sqrt{x-2} \rightarrow x^2-1 > 0 \rightarrow x^2 > 1 \rightarrow x > 1$
 $x-2 > 0 \rightarrow x > 2 \rightarrow x \geq 2 \rightarrow [2, +\infty)$
 سوال (۴)

ب) $4-3x > 0 \rightarrow 4 > 3x \rightarrow x < \frac{4}{3}$
 $4x-3 > 0 \rightarrow 4x > 3 \rightarrow x > \frac{3}{4}$
 $\rightarrow (\frac{3}{4}, \frac{4}{3})$

$\sqrt{4x-a} + \sqrt{b-3x}$
 $b-4 = 0 \rightarrow b = 4$
 $\frac{b}{a} = \frac{4}{12} = \frac{1}{3}$
 سوال (۷)
 اگر این دو در ۲۳

$\rightarrow$ $\begin{array}{c|c|c|c} x & y & z & \text{RHS} \\ \hline 1 & 7 & -5 & -4 \\ 1 & 1 & -7 & 7 \end{array}$

$\sqrt{Y[n] - \omega} \rightarrow Y[n] - \omega > 0$
 $Y[n] > \omega \rightarrow [n] > \omega / Y \rightarrow [Y, +\infty)$

سؤال ١٢

الف) $\frac{n+1}{1n-31} > 0 \Rightarrow n+1 > 0 \Rightarrow n > -1$

صحيح
 $\frac{1}{1n-31} > 0 \Rightarrow 1n-31 > 0 \Rightarrow n > 31$

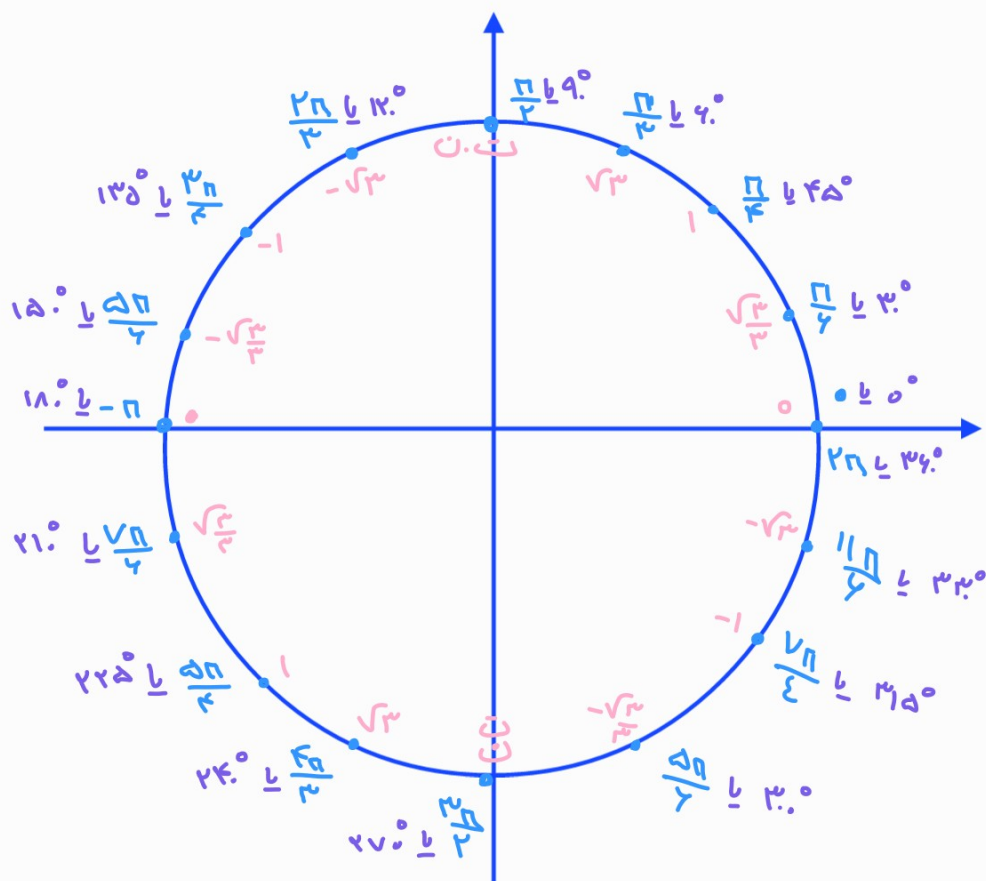
$\frac{4-n}{n^2+2n+4} > 0 \Rightarrow 4-n > 0 \Rightarrow 4 > n$

$\Delta = 4 - 14 = -10 < 0 \Rightarrow$ صحيح

$\uparrow n$
 $[-1, 4] - \{31\}$

ب) $[n] < 0 \Rightarrow [n] > 4$, $4 - [n] > 0 \Rightarrow 4 > [n]$
 $\downarrow$
 $[4, +\infty)$ $\longleftrightarrow$ $(-\infty, 4)$

$\emptyset < =$



$\tan \leftarrow$ ■
 زاویه به حسب رادیان $\leftarrow$ ■
 زاویه به حسب درجه $\leftarrow$ ■

$$\tan x = \frac{\sin x}{\cos x}$$

الف) $y = \sqrt{\frac{x^2 - x - 4}{x^2 - 13x^2 + 34}} \geq 0 \rightarrow \frac{(x-3)(x+2)}{(x^2-9)(x^2-4)} \geq 0$

$$\frac{(x-3)(x+2)}{(x-3)(x+3)(x-2)(x+2)} \geq 0 \rightarrow \begin{array}{ccccccc} & -3 & -2 & 2 & 3 & & \\ + & \oplus & - & \oplus & - & \oplus & + \end{array}$$

$$D_f = (-\infty, -3) \cup (2, 3) \cup (3, +\infty)$$