

3 در آن جاگذاری می کنیم زیرا شرط است $\rightarrow 6 + b = 0$
 $b = -6$

سوال ۲۔

بالتسوية من ضربت و لا تحت

$m^2 \leq 1 \rightarrow -1 \leq m \leq 1$
 $\begin{cases} \text{بزرگترین} \\ \text{کوچکترین} \end{cases} \rightarrow \begin{cases} 1 \\ -1 \end{cases} \rightarrow 1 - (-1) = 2$

- 5 Nov

$$x^2 - 2x \geq 0 \rightarrow -2 \leq x \leq 2$$

$$[a] + [-x] \begin{cases} 0 & \text{مع } x \\ 1 & \text{مع } -x \end{cases} \rightarrow \begin{matrix} \text{رانه مع } x \text{ باشد رانه} \\ 0 + 2 = 2 \checkmark \end{matrix}$$

$$\xrightarrow{\text{اعداد}} [-2, 2] \text{ در بازه}$$

$$\xrightarrow{\text{اعداد}} [-2, 0) \cup (0, 2] \leftarrow \text{اعداد}$$

سوال ۴ -

الف) $2x^3 + 3x^2 \geq 0 \rightarrow 2x^2(x+3) \geq 0$
 $x \geq -3$ $D_f = [-3, +\infty)$

$$b) \frac{(x^5-1)(x^5-12x^2)}{x^5-1} \Rightarrow x^5-1 = (x-1)(x^4+x^3+x^2+x+1) \rightarrow x \neq 1$$

$$x^5-1 = (x-1)(x+1) \rightarrow x^4+x^3+x^2+x+1 = 0$$

$$x^5-12x^2 = x^2(x^3-12) \Rightarrow x^3-12 = 0 \rightarrow x = \sqrt[3]{12}$$

$$\frac{(x^5-1)(x^5-12x^2)}{x^5-1} \Rightarrow 0$$

$$Df = (-\infty, -1] \cup \{0\} \cup [\sqrt[3]{12}, +\infty)$$

$$\sqrt[n]{|n-r|-r} \rightarrow |n-r| \geq r \rightarrow |n-r| \geq r \rightarrow n \geq \Delta \quad n \leq -1 \rightarrow (-\infty, -1] \cup [\Delta, +\infty)$$

4) $\sqrt{\epsilon - |x - u|} \rightarrow |x - u| \leq \epsilon \rightarrow -\epsilon \leq x - u \leq \epsilon \rightarrow -\epsilon \leq u \leq \epsilon \rightarrow Df = [-\epsilon, \epsilon]$

سوال ۶ -

ملاحظة: $\oplus$ لـ u صفر $u \leq 0$
 $u \geq 0$ لـ u $u \leq 1$
 $\sqrt{1-u|u|} \rightarrow (1-u) \text{ لـ } |u| \geq 0$
 $D_f z(-\infty, 1]$

$$\hookrightarrow y = \frac{1}{\sqrt{r - |u - v| - 1}} \rightarrow \begin{matrix} r - |u - v| - 1 > 0, & r - |u - v| > 0 \rightarrow |u - v| < r \\ r < u < v & \boxed{Df_2(r, v)} & -r < u - v < r \end{matrix}$$

الف) $\frac{\sin^2 u - 1}{\cos u} \rightarrow \cos u \neq 0 \rightarrow R = \left\{ \frac{\pi}{2} + k\pi \mid k \in \mathbb{Z} \right\}$

ب) $y = \frac{\cos u}{\cos u - 1} \rightarrow \cos u - 1 \neq 0 \rightarrow \cos u \neq 1 \rightarrow u \neq \pm \frac{\pi}{2} + k\pi \rightarrow D = \mathbb{R} - \left\{ \pm \frac{\pi}{2} + k\pi \mid k \in \mathbb{Z} \right\}$

الف) $y = \frac{u+r}{|u+r| - |u+r|} \rightarrow |u+r| \neq |u+r| \rightarrow (u+r)^r \neq (u+r)^r$
 $(u+r)^r (u+r)^r = [(u+r) - (u+r)][(u+r) + (u+r)] \rightarrow (u-r)(u+r) \neq 0$
 $u \neq r \rightarrow u = -r \rightarrow R = \left\{ -\frac{\pi}{2}, \frac{\pi}{2} \right\}$

ب) $\sqrt{|u+r| - |u+r|} \rightarrow |u+r| \geq |u+r| \rightarrow (u+r)^r \geq (u+r)^r$
 $u \leq -r$
 $u \geq r$
 $D_f = (-\infty, -\frac{\pi}{2}] \cup [\frac{\pi}{2}, \infty)$

$\sqrt{\log \log \frac{(u-1)}{u}} \rightarrow \log \frac{(u-1)}{u} > 0 \rightarrow u > \frac{1}{1} \rightarrow D = \left(\frac{1}{2}, \frac{\pi}{2} \right]$
 $\log \frac{(u-1)}{u} > 0 \rightarrow \log \frac{(u-1)}{u} > 1 \rightarrow u-1 < 0 \rightarrow u < \frac{\pi}{2}$
 $\frac{1}{2} < u < 1$
 $0 < u-1 < 1$

الف) $y = \log(\cos u + 1) \rightarrow \cos u + 1 > 0 \rightarrow \cos u > -1 \rightarrow D = \left(-\frac{\pi}{2} + k\pi, \frac{\pi}{2} + k\pi \right) \rightarrow k \in \mathbb{Z}$

ب) $\sqrt{\log \frac{u+1}{u+1}} \rightarrow \log \frac{u+1}{u+1} > 0 \rightarrow u-1 \geq 1 \rightarrow u \geq 2$
 $\frac{u-1}{u+1} \geq 1 \rightarrow \frac{u-1}{u+1} - 1 \geq 0 \rightarrow \frac{u-1-u-1}{u+1} \geq 0 \rightarrow \frac{-2}{u+1} \geq 0 \rightarrow u+1 < 0 \rightarrow u < -1$
 $D = (-\infty, -1)$