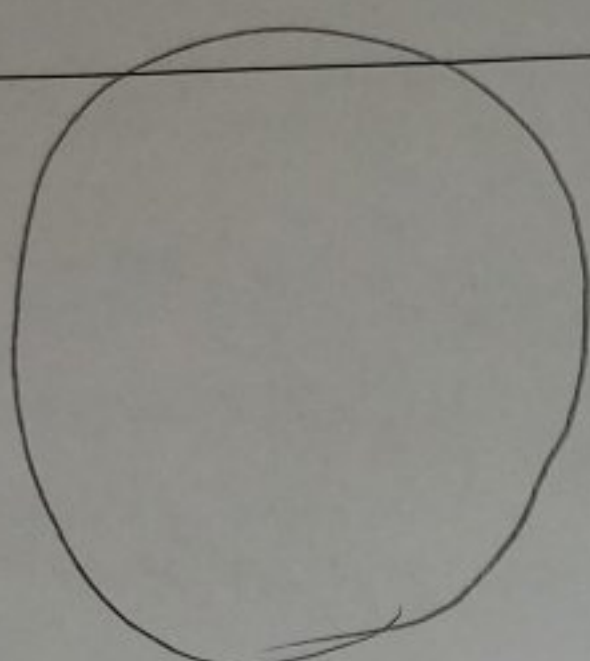




الف) $\frac{1}{r} = -1 + r(-1) = -\frac{a}{r} = -2/5$

ب) $-(-\frac{\sqrt{3}}{r}) + \frac{\sqrt{3}}{r} - r(-\frac{\sqrt{3}}{r}) = \frac{a\sqrt{3}}{r}$

ج) $-\frac{1}{\sqrt{r}} + r(\frac{1}{\sqrt{r}}) - r(-\frac{1}{\sqrt{r}}) = \frac{1}{\sqrt{r}} \sim \frac{r\sqrt{r}}{r}$

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

$a^2 + 5a = 2a + a + 2 \sim a^2 + a - 2 = 0 \rightarrow (a+2)(a-1) = 0$

$a > 0 \rightarrow a = 1 \sim f(1) = 1 + 5(1) = 6$

در هر دو $\rightarrow |-x+1| = 1-x = 2 > 2 \checkmark$

$\Rightarrow r(-r)^2 - b = a + r(-r) \rightarrow (a-b) = a-r$
 $a+b = 2r$

$a^2 \in \mathbb{R} \neq 0 \rightarrow a^2(a-5) \neq 0 \rightarrow D = \mathbb{R} - \{0, 5\}$

ب) $r(a^2+1)(a+1) \xrightarrow{r=-2} \frac{D}{K} = \{-2\}$

$a^2 - 1 \geq 0 \rightarrow |a| \geq 1$

الف) $a - 2 \geq 0 \rightarrow a \geq 2 \sim a \geq 1$

ب) $4 - 3a \geq 0 \rightarrow a \leq \frac{4}{3}$

$4a - 3 > 0 \rightarrow a > \frac{3}{4} \rightarrow \sqrt{4a-3} \neq 0 \rightarrow a \neq \frac{3}{4} \rightarrow (\frac{3}{4}, \frac{4}{3}) \cup (\frac{4}{3}, +\infty)$

$4a - a \geq 0 \rightarrow a \geq \frac{a}{4}$

$b - 3a \geq 0 \rightarrow a \leq \frac{b}{3}$

$\frac{a}{4} = \frac{b}{3} = 2 \rightarrow a = 8, b = 6$

$\frac{b}{a} = ? \rightarrow \frac{6}{8} = \frac{3}{4}$

$D = (-\infty, -3) \cup [-2, -1) \cup [1, +\infty) \cup [3, +\infty)$

الف) $\sqrt{(a-3)(a+1)}$

$(a^2-9)(a^2-1) \rightarrow (a-3)(a+3)(a-1)(a+1)$

$a \neq 3, -3, 1, -1$

$\rightarrow \frac{(a+1)(a+3)}{(a-3)(a+1)(a+3)(a+1)} \geq 0 \rightarrow \frac{1}{(a+3)(a+1)} \geq 0$

$\rightarrow D = (-\infty, -3) \cup (3, +\infty) - \{3, -1\}$

$\rightarrow (3, +\infty) \cup (-\infty, -3)$

ب) $r[a] - 5 \geq 0$

$r[a] \geq 5 \rightarrow [a] \geq 2 \rightarrow a \geq 2 \Rightarrow D = [2, +\infty)$

ج) $r[a] - 5 \geq 0 \rightarrow [a] \geq \frac{5}{r} \rightarrow [a] \geq 1.25$

$a \geq 1.25 \rightarrow D = [1.25, +\infty)$

د) $\frac{a+1}{|a-3|} \geq 0 \rightarrow |a-3| > 0 \quad (a \neq 3)$

$a+1 > 0 \rightarrow a > -1$

$a \neq 3$

$\Rightarrow D_1 = [-1, 3) \cup (3, +\infty)$

$\Rightarrow [-1, 3) \cup (3, +\infty)$

$\frac{a-2}{a^2+12a+5} \geq 0$
 $(a+1)[+12] > 0$
 $5-a \geq 0$
 $a \leq 5$
 $D_2 = (-\infty, 5]$

ه) $[a] - 5 \geq 0 \rightarrow [a] \geq 5 \rightarrow D = \emptyset$

$1 - [a] \geq 0 \rightarrow [a] \leq 1$