

$$K_2q + Y = 11$$

1

$$f(1) = 1 + f(1), \Delta$$

3

$$f(-3) = r(-3)^2 - b = a + r(-3) \rightarrow 11 - b = a - 9 \rightarrow a + b = 20$$

3

$$x = 2 \rightarrow \begin{cases} 12 - 2b \geq 0 \rightarrow 2b \leq 12 \rightarrow b \leq 6 \\ b - 9 \geq 0 \rightarrow b \geq 9 \end{cases} \rightarrow \begin{cases} b \leq 6 \\ a = 12 \end{cases} \rightarrow \frac{b}{a} = \frac{1}{2}$$

C

$$\textcircled{1} \cap \textcircled{2} = [-1, 4] - \{3\}$$

$$\begin{array}{c} \downarrow \\ \frac{+ \quad -}{- \quad 0 \quad +} \\ \textcircled{1} \quad D = [t, +\infty) \end{array}$$

2

الف) $y = \sqrt{\frac{(x-3)(x+2)}{(x-1)(x+2)(x+3)(x-3)}}$ $D = (-\infty, -3) \cup (2, 3) \cup (3, +\infty)$ ب) $y = \sqrt{\frac{(x-1)(x-3)(x+2)}{(x-2)(x+3)(x+1)}}$ عبارت صورت $1-2x+4x^2=0 \rightarrow x = \frac{1 \pm \sqrt{1-4}}{2} = \frac{1 \pm \sqrt{-3}}{2}$ (مختصم) عبارت مخرج $1+x = 0 \rightarrow x = -1$ (مختصم) $D = (-\infty, -3) \cup [-2, -1) \cup [1, 2) \cup [3, +\infty)$	$\frac{-3}{+} \frac{-2}{-} \frac{-1}{-} \frac{1}{-} \frac{2}{+} \frac{3}{+}$ $\frac{-2}{+} \frac{-1}{-} \frac{1}{-} \frac{2}{+} \frac{3}{+}$ 6
الف) $\frac{-x}{+} \frac{-1}{0} = -$ $D = (-\infty, -1)$ $D = (-\infty, -2)$ ب) $5x^2 + 4 < 0 \rightarrow 5x^2 = -4$ (بدون جواب) ج) $([x]-3)([x]+1)$ $\frac{-1}{+} \frac{0}{-} \frac{3}{-} \frac{4}{+}$ $D = (-\infty, -1) \cup [0, 3) \cup [4, +\infty)$	7
الف) $\tan x = \frac{\sin x}{\cos x} \rightarrow \cos x \neq 0 \rightarrow \tan x + 1 \neq 0 \rightarrow \tan x \neq -1$ $\cot x = \frac{\cos x}{\sin x} \rightarrow \sin x \neq 0$ $D = \mathbb{R} - \{ \frac{k\pi}{2}, k\pi - \frac{\pi}{2} \}$ ب) $1 - \frac{1}{4} \sin^2 x > 0 \rightarrow \sin^2 x < 1 \rightarrow \sin^2 x < \frac{1}{4} \rightarrow -\frac{1}{2} < \sin x < \frac{1}{2}$ $D = [k\pi - \frac{\pi}{6}, k\pi + \frac{\pi}{6}]$	8
الف) $x-1 > 0 \rightarrow x > 1$ (1) $1 - \log_{\frac{1}{2}} x > 0 \rightarrow \log_{\frac{1}{2}} x < 1 \rightarrow x-1 < \frac{1}{2} \rightarrow x < \frac{3}{2}$ (2) $D = (1, \frac{3}{2})$ ب) $x^2 - x > 0 \rightarrow x(x-1) > 0$ $D = (-\infty, 0) \cup (1, +\infty)$ (1) $x^2 - 3x > 0 \rightarrow x(x-3) > 0$ $D = (-\infty, 0) \cup (3, +\infty)$ (2) $1 - \log_{\frac{1}{2}} x^2 - 3x \neq 0 \rightarrow \log_{\frac{1}{2}} x^2 - 3x \neq 1 \rightarrow x^2 - 3x \neq 2 \rightarrow \frac{x^2 - 3x - 2}{(x+1)(x-4)} \neq 0$ $D = 1 \cap 2 \cap 3 = (-\infty, 0) \cup (3, +\infty) - \{-1, 4\}$ $x \neq -1, 4$ (3)	9
الف) $\frac{x^2 - x^2}{-1} > 0 \rightarrow \frac{x^2 - x^2}{-1} > 0 \rightarrow x^2 - x^2 > 0 \rightarrow x^2 - x^2 > 0$ $\rightarrow (x-1)(x-3) < 0$ $D = (-\infty, 1) \cup (3, +\infty)$ ب) $\frac{xw + a}{xw + b} \in \mathbb{W} \rightarrow x \in -\frac{bw - a}{w - b} \rightarrow D = \{x \mid x = -\frac{bw - a}{w - b}, k \in \mathbb{W}, k \neq \frac{b}{a}\}$	10