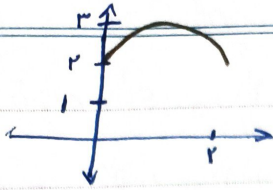
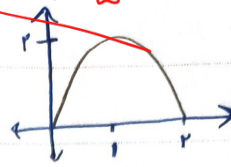


الف)



ب)



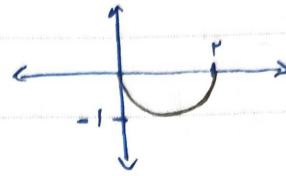
①

ج)



② ✓

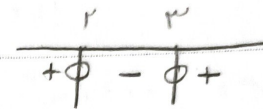
د)



②

الف) $x^2 - 3x + 2 > 0$

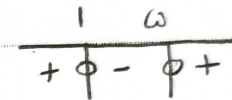
$(x-1)(x-2) > 0$



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

ب) $x^2 - 4x + 5 < 0$

$(x-1)(x-5) < 0$

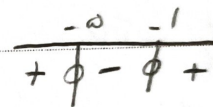


$(1, 5)$

③ ✓

ج) $x^2 + 6x + 5 > 0$

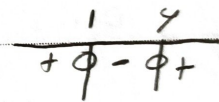
$(x+1)(x+5) > 0$



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

د) $x^2 - 7x + 6 < 0$

$(x-1)(x-6) < 0$

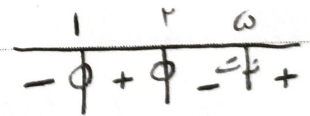


$[1, 6]$

③

الف) $\frac{x^2 - 3x + 1}{x - 5} < 0$

$\frac{(x-1)(x-2)}{x-5} < 0$



$(-\infty, 1) \cup (2, 5)$

ب) $\frac{x^2 - 1}{x^2 - 9x + 5} > 0$

$\frac{(x-1)(x+1)}{(x-1)(x-5)} > 0$



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

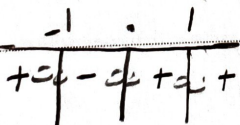
④ ✓

الف) $y = \sqrt{\frac{x^3 - 1}{x^3 - x}}$

$\frac{x^3 - 1}{x^3 - x} \geq 0$

$\frac{x^3 - 1}{x(x-1)(x+1)} \geq 0$

④



$(-\infty, -1) \cup (0, +\infty) - \{1\}$

1, 5

ب) $y = \sqrt{\frac{x^2-16}{x^2-9}}$

$\frac{x^2-16}{x^2-9} \geq 0 \rightarrow \frac{(x-4)(x+4)}{(x-3)(x+3)} \geq 0$

$\frac{-4}{+} \frac{1}{-} \frac{3}{+} \frac{4}{+}$ $(-\infty, -4] \cup (1, +\infty) - \{4\}$

الف) $y = \sqrt{4-\sqrt{2-x}}$

$4 \geq \sqrt{2-x} \rightarrow 2-x \leq 16 \rightarrow x \geq -14$

$4-\sqrt{2-x} \geq 0 \rightarrow \sqrt{2-x} \leq 4 \rightarrow x \geq -14$

5

$[14, 2]$

ب) $\sqrt{3-\sqrt{x-2}}$

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

1

$3-\sqrt{x-2} \geq 0 \rightarrow \sqrt{x-2} \leq 3 \rightarrow x-2 \leq 9 \rightarrow x \leq 11$

$[2, 11]$

الف) $\sqrt{4-2x^2}$

$4-2x^2 \geq 0 \rightarrow 2(2-x^2) \geq 0 \rightarrow 2-x^2 \geq 0 \rightarrow x^2 \leq 2 \rightarrow -\sqrt{2} \leq x \leq \sqrt{2} \rightarrow [-\sqrt{2}, \sqrt{2}]$

4

ب) $\sqrt{3|x|-9}$

2 ✓

$3|x|-9 \geq 0 \rightarrow 3|x| \geq 9 \rightarrow |x| \geq 3$

$x \geq 3 \rightarrow (-\infty, -3] \cup [3, +\infty)$

الف) $y = \sqrt[3]{\frac{|x|+1}{|x|-3}}$

$|x|-3 \neq 0 \rightarrow |x| \neq 3$

$x \neq 3, -3 \rightarrow \mathbb{R} - \{3, -3\}$

✓

ب) $y = \sqrt[3]{\frac{\sqrt{x}+1}{\sqrt{x}-3}}$

2 ✓

$\sqrt{x}-3 \neq 0 \rightarrow \sqrt{x} \neq 3 \rightarrow x \neq 9$

$[0, +\infty) - \{9\}$

