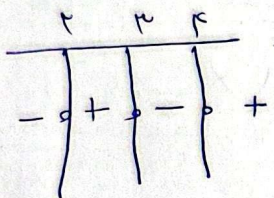


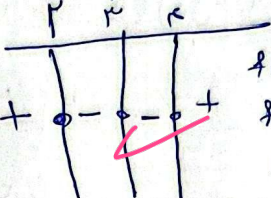
۱,۵

الف) $x \leq 2, x \leq 3, x \leq 4$



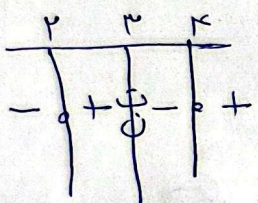
$f(x) > 0 \rightarrow (2, 3) \cup (4, +\infty)$
 $f(x) < 0 \rightarrow (-\infty, 2) \cup (3, 4)$
 $f(x) = 0 \rightarrow x \leq 2, 3, 4$

ب) $x \leq 2, x \leq 3, x \leq 4$



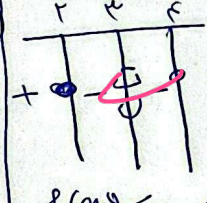
$f(x) > 0 \rightarrow (-\infty, 2) \cup (4, +\infty)$
 $f(x) < 0 \rightarrow (2, 3)$
 $f(x) = 0 \rightarrow x \leq 2, 3, 4$

الف) $x \leq 2, x \leq 3, x \leq 4$



$f(x) > 0 \rightarrow (2, 3) \cup (4, +\infty)$
 $f(x) < 0 \rightarrow (-\infty, 2) \cup (3, 4)$
 $f(x) = 0 \rightarrow x \leq 2, 3, 4$

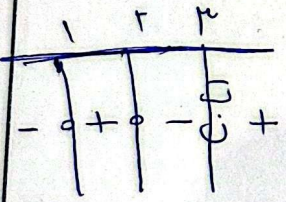
ب) $x \leq 2, x \leq 3, x \leq 4$



$f(x) > 0 \rightarrow (-\infty, 2) \cup (4, +\infty)$
 $f(x) < 0 \rightarrow (2, 3)$
 $f(x) = 0 \rightarrow x \leq 2, 3, 4$

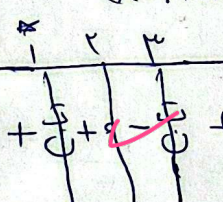
تقریب غلط است! (عبارت درجه ۳ است)

الف) $\frac{(x-1)(x-2)}{(x-3)} \rightarrow x \leq 1, 2, 3$



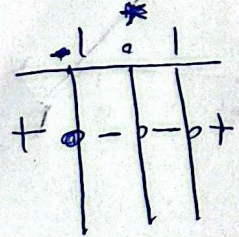
$f(x) > 0 \rightarrow (1, 2) \cup (3, +\infty)$
 $f(x) < 0 \rightarrow (-\infty, 1) \cup (2, 3)$
 $f(x) = 0 \rightarrow x = 1, 2$

ب) $\frac{(x-1)(x-2)}{(x-3)(x-1)} \rightarrow x \leq 1, 2, 3$



$f(x) > 0 \rightarrow (-\infty, 1) \cup (3, +\infty)$
 $f(x) < 0 \rightarrow (1, 2)$
 $f(x) = 0 \rightarrow x = 2$

الف) $\frac{x^2(x^2-1)}{x^2+x+2} \rightarrow x \leq 0, 1, -1$



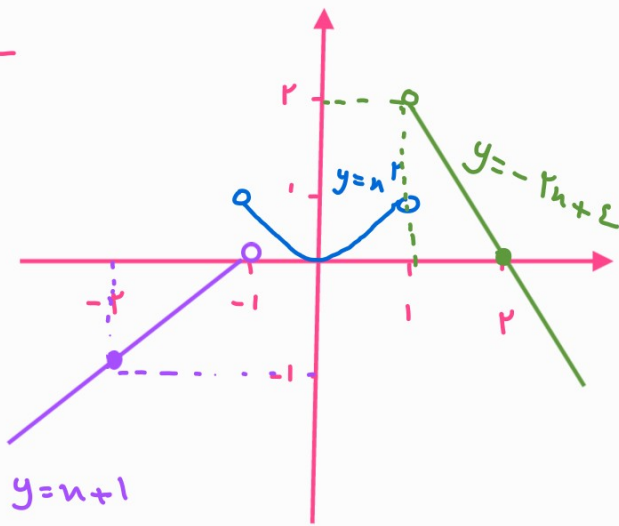
$f(x) > 0 \rightarrow (-\infty, -1) \cup (1, +\infty)$
 $f(x) < 0 \rightarrow (-1, 0) \cup (0, 1)$
 $f(x) = 0 \rightarrow x = 0, -1, 1$

ب) $\frac{x^2+2x+2}{(x^2+x+1)+2} \rightarrow \Delta < 0$

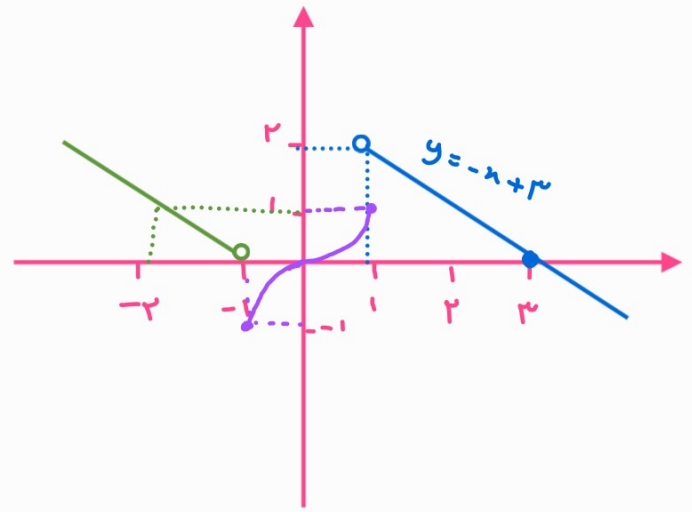
$f(x) > 0$
 هیچوقت صفر یا منفی
 نمی شود (همواره مثبت)

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۶-



۹- الف) $y = \frac{x^3 - 3x + 2}{x - 3} = \frac{(x-1)(x^2 + x - 2)}{x - 3} = \frac{(x-1)(x+2)(x-1)}{x - 3}$

مجموعه اعداد صفر است پس بر $x - 1$ نقیض پذیریست!

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