Victor Ramos Lista de exercícios

① C

② a) $f(x) = x^2 - 5x - 10$

$f(2) = 2^2 - 5.2 - 10$ $f(-2) = (-2)^2 - 5.-2 - 10$

$f(2) = 4 - 10 - 10$ $f(-2) = 4 + 10 - 10$

$f(2) = -16$ $f(-2) = 4$

b) $-14 = x^2 - 5x - 10$ $\Delta = b^2 - 4ac$ $x' = \frac{5+3}{2} = 4$

$-4 = x^2 - 5x$ $\Delta = 25 - 16$

$x^2 - 5x + 4 = 0$ $x'' = \frac{5-3}{2} = 1$

$\Delta = 9$

1 ou 4

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③

$g(0) = 2.0 + 5$ | $g(2) = 2.2 + 5$ | $g(-5) = -5^2 + 3$

$g(0) = 5$ | $g(2) = 9$ | $g(-5) = -25 + 3$

$g(-5) = -22$

④ a) $f(x) = \frac{5}{2x-6}$

$2x - 6 = 0$

$2x = 6$

$x = 3$

$D_f = \{x \in \mathbb{R} / x = 3\}$

b) $g(x) = \sqrt{x^2 - 8x + 7}$

$x^2 - 8x + 7 \geq 0$

$\Delta = 64 - 28$

$\Delta = 36$

$x' = \frac{8 + 6}{2} = 7$

$x'' = \frac{8 - 6}{2} = 1$

$D_g =]-\infty, 1] \cup [7, +\infty[$

c) $h(x) = \frac{7}{\sqrt{2x+6} - \sqrt{21-x}}$

$2x + 6 \geq 0$

$2x \geq -6$

$x \geq -3$

$21 - x \geq 0$

$-x \geq -21$

$x \leq 21$

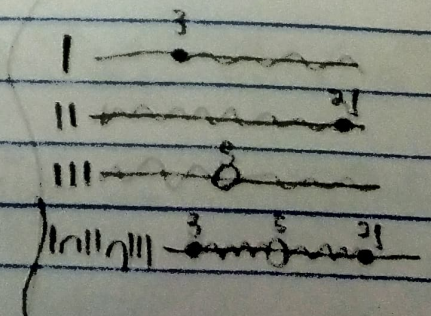
$\sqrt{2x+6} - \sqrt{21-x} \neq 0$

$\sqrt{2x+6} \neq \sqrt{21-x}$

$2x + 6 \neq 21 - x$

$3x \neq 15$

$x \neq 5$



$D_h = [3, 5[\cup]5, 21]$

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⑤ e

⑥ c

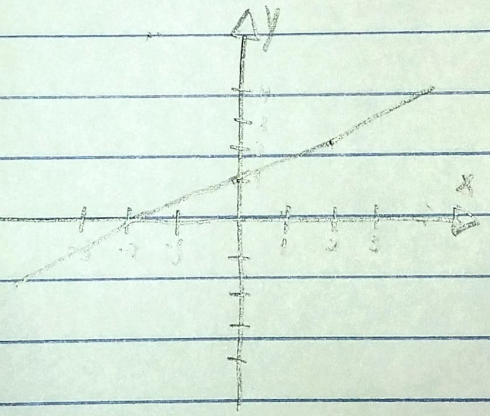
⑦ a) $Im = [0,1] \cup [2,8]$

b) $X = \{1\}$

c) $X =]0,3[$

⑧

X	Y
-2	0
-1	0,5
0	1
1	1,5
2	2



⑨ e

⑩ a

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11) a) $V(t) = at + b$

$V(2) = 2a + b$

$V(5) = 5a + b$

$$\begin{cases} 5a+b = 1700 \\ 2a+b = 800 \end{cases} \Rightarrow 3a = 900 \Rightarrow a = 300$$

$2a + b = 800$
$2 \cdot 300 + b = 800$
$600 + b = 800$
$b = 200$

$V(t) = 300t + 200$

b) $V(3) = 300 \cdot 3 + 200$

$V(3) = 1100\ L$

c) $V(t) = 5000$

$300t + 200 = 5000$

$300t = 4800$
$t = \frac{4800}{300} \Rightarrow t = 16h$