ЗАДАНИЕ 9

Эки

Т. 1

$f(x) = -2x+3$, $g(x) = 3x+2$

$f(x) - g(x) \geq 0$

$(-2x+3) - (3x+2) \geq 0 \Leftrightarrow -2x+3-3x-2 \geq 0 \Leftrightarrow$

$\Leftrightarrow -5x \geq -1 \;/:(-5) \Leftrightarrow x \leq \frac{1}{5}$

$S = (-\infty; \frac{1}{5}]$

Т. 2

$f(x) = -3x+4$,

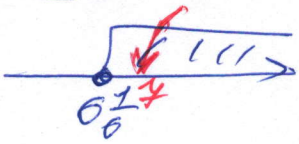
$2f(x) - 3f(5) \leq 4$

наименьш. целое

$f(5) = -3 \cdot 5 + 4 = -11$

$2(-3x+4) - 3 \cdot (-11) \leq 4$

$-6x+8+33 \leq 4 \Leftrightarrow -6x \leq -37 \;/:(-6) \Leftrightarrow x \geq 6\frac{1}{6}$



$S = [6\frac{1}{6}; +\infty)$

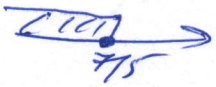
наименьшее целое $x = 7$

Тест 3.

не превосходит

$f(x) = 2x-3$, $g(x) = -3x+4$, $f \leq g$

$2x-3 \leq -3x+4 \Leftrightarrow 5x \leq 7 \Leftrightarrow x \leq \frac{7}{5}$.



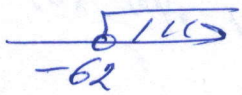
$S = (-\infty; \frac{7}{5}]$.

Тест 4

$\frac{12-1,5x}{5} < \frac{11-0,5x}{2} \Leftrightarrow 2(12-1,5x) < 5(11-0,5x) \Leftrightarrow$

$\Leftrightarrow 24-3x < 55-2,5x \Leftrightarrow -0,5x < 31 \;/:(-0,5) \Leftrightarrow$

$\Leftrightarrow x > -62$



$S = (-62; +\infty)$.

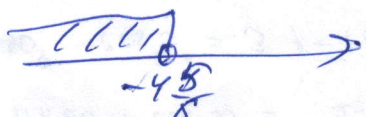
Тест 5

наибольш. целое

$f(x) = 2(3x-7)$, $g(x) = 3(4x+5)$

$f(x) > g(x)$

$6x-14 > 12x+15 \Leftrightarrow -6x > 29 \;/:(-6) \Leftrightarrow x < -4\frac{5}{6}$



$S = (-\infty; -4\frac{5}{6})$

наибольш. целое $x = -5$

Задание 9

Т.6

№9 $f(x) = -4x+2$, $g(x) = 2x+9$

$-4x+2-(2x+9) \geq 0 \Leftrightarrow -4x+2-2x-9 \geq 0 \Leftrightarrow$

$\Leftrightarrow -6x \geq 7 \;/:(-6) \Leftrightarrow x \leq -\frac{7}{6}$

$S = (-\infty; -\frac{7}{6}]$

Т.7

$f(x) = \sqrt{6-3x} + \frac{3}{x-1}$

$\mathcal{D}: \begin{cases} 6-3x \geq 0 \\ x-1 \neq 0 \end{cases} \Leftrightarrow \begin{cases} -3x \geq -6 \\ x \neq 1 \end{cases} \Leftrightarrow \begin{cases} x \leq 2 \\ x \neq 1 \end{cases}$

$\mathcal{D} = (-\infty; 1) \cup (1; 2]$

Т.8

$f(x) = -3x+5$ $\quad f \leq 2$

$-3x+5 \leq 2 \Leftrightarrow -3x \leq -3 \Leftrightarrow x \geq 1$ $\quad S = [1; +\infty)$

Т.9.

$f(x) = \frac{2-x}{3}$, $g(x) = \frac{7x+1}{2}$. $\quad f(x) - g(x) > 1$

$\frac{2-x}{3} - \frac{7x+1}{2} > 1 \;/\cdot 6 \Leftrightarrow 2(2-x) - 3(7x+1) > 6 \Leftrightarrow$

$\Leftrightarrow 4-2x-21x-3 > 6 \Leftrightarrow -23x > 5 \Leftrightarrow x < -\frac{5}{23}$

$S = (-\infty; -\frac{5}{23})$

Т.10.

$f(x) = \frac{3x-1}{2}$, $g(x) = \frac{5x-4}{3}$, $f(x) - g(x) > 2x$, наиб. целое

$\frac{3x-1}{2} - \frac{5x-4}{3} > 2x \;/\cdot 6 \Leftrightarrow 9x-3-10x+8 > 12x \Leftrightarrow -13x > -5 \Leftrightarrow$

$\Leftrightarrow x < \frac{5}{13}$ $\quad S = (-\infty; \frac{5}{13})$

наиб. цел. $x = 0$.

Т.11

$f(x) = 3x-2$, $\quad 1-2f(x) \geq 0$

$1-2(3x-2) \geq 0 \Leftrightarrow 1-6x+4 \geq 0 \Leftrightarrow -6x \geq -5 \Leftrightarrow x \leq \frac{5}{6}$

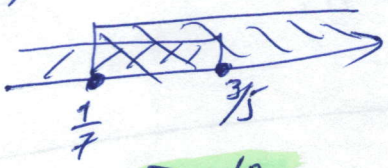
$S = (-\infty; \frac{5}{6}]$

Т 12

$f(x) = \sqrt{3-5x} + \sqrt{7x-1}$

$D: \begin{cases} 3-5x \geq 0 \\ 7x-1 \geq 0 \end{cases} \Leftrightarrow \begin{cases} 5x \leq 3 \\ 7x \geq 1 \end{cases} \Leftrightarrow \begin{cases} x \leq \frac{3}{5} \\ x \geq \frac{1}{7} \end{cases}$

$D = [\frac{1}{7}; \frac{3}{5}]$



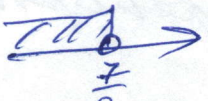
Т. 13

$f(x) = -4x + 3$

$f(2) = -8 + 3 = -5$

$2(-4x+3) > -5+4 \Leftrightarrow -8x+6 > -1 \Leftrightarrow -8x > -7 \;/:(-8)$

$x < \frac{7}{8}$ $\quad S = (-\infty; \frac{7}{8})$.



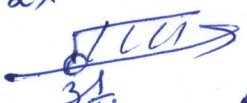
Наибольшее целое $x = 0$.

Т. 14

$\frac{2}{4}\left(\frac{4-x}{2} + \frac{5-2x}{4}\right) < 0$

$8 - 2x + 5 - 2x < 0 \Leftrightarrow -4x < -13 \Leftrightarrow x > \frac{13}{4} \quad x > 3\frac{1}{4}$

$S = (3\frac{1}{4}; +\infty)$



Наименьшее целое $x = 4$.

Наименьшее целое — ?

Тест 15

$f(x) = -3x + 4, \quad g(x) = 4x - 10 \quad f(x) \geq g(x)$

$-3x + 4 \geq 4x - 10 \Leftrightarrow -7x \geq -14 \Leftrightarrow x \leq 2$

$S = (-\infty; 2]$

Тест 16

$f(x) = \sqrt{-2x+5} + \frac{1}{x-1}$

$D: \begin{cases} -2x+5 \geq 0 \\ x-1 \neq 0 \end{cases} \Leftrightarrow \begin{cases} x \leq \frac{5}{2} \\ x \neq 1 \end{cases}$

$D = (-\infty; 1) \cup (1; \frac{5}{2}]$