



**Ex 22**

$$A = \frac{2x^2 - 7x}{2} \quad B = (x-1)^2 \quad A \geq B$$

$$\frac{2x^2 - 7x}{2} \geq x^2 - 2x + 1$$

$$2x^2 - 7x \geq 2x^2 - 4x + 2$$

$$-3x \geq 2 \quad x \leq -\frac{2}{3}$$

$$S = (-\infty; -\frac{2}{3}]$$

**Ex 23**

$$f(x) = \sqrt{-4x-1} + \frac{3}{x^2+2}$$

$$\begin{cases} -4x-1 \geq 0 \\ x^2+2 \neq 0 \end{cases} \Leftrightarrow \begin{cases} -4x \geq 1 \\ x \in \mathbb{R} \end{cases} \quad x \leq -\frac{1}{4}$$

$$S = (-\infty; -\frac{1}{4}]$$

**Ex 24**

$$f(x) = -3x+2 \quad f(x) \geq -\frac{1}{2} \quad x \in \mathbb{N}$$

$$\begin{matrix} 2 & 2 \\ -3x+2 & \geq -\frac{1}{2} \end{matrix} \Leftrightarrow -6x+4 \geq -1 \Leftrightarrow -6x \geq -5$$

$$x \leq \frac{5}{6}$$

$$x \in (-\infty; \frac{5}{6}]$$

$$x \in \mathbb{N} \Rightarrow x = 0$$

**Ex 25**

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

$$-2x-3 \geq 5 \Leftrightarrow -2x \geq 8 \Leftrightarrow x \leq -4$$

$$S = (-\infty; -4]$$

Урок 56

$f(x) = 2(x-1), g(x) = 3(x-2)$   $x \in \mathbb{N}$   
 $f(x) - g(x) \geq 1$

$2x-2 - 3(x-2) \geq 1 \Leftrightarrow 2x-2 - 3x+6 \geq 1$

$-x \geq -3 \Leftrightarrow x \leq 3$

$S = (-\infty; 3], x \in \mathbb{N} \Rightarrow S = \{0, 1, 2, 3\}$

Урок 57

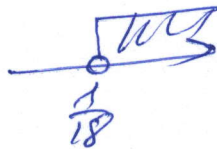
$f(x) = \frac{3+4x}{\sqrt{3-2x-4(1-5x)}}$

$\varnothing: 3-2x-4(1-5x) > 0$

$3-2x-4+20x > 0$

$18x > 1 \quad x > \frac{1}{18}$

$S = (\frac{1}{18}; +\infty)$



Урок 58

$f(x) = 3x-5, f(x) + f(\frac{x}{3}) < f(2-x)$

$3x-5 + 3(\frac{x}{3})-5 < 3(2-x)-5$

$3x-5+x-5 < 6-3x-5$

$4x < 11$

$x < \frac{11}{4}$

$S = (-\infty; \frac{11}{4})$



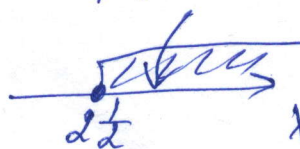
Урок 59

$f(x) = 2x-1, g(x) = x+3(x-2)$

$f(x) \leq g(x)$   
решите неравенство?

$2x-1 \leq x+3x-6$

$-2x \leq -5 \quad x \geq \frac{5}{2}$



$x \in [\frac{5}{2}; +\infty)$

решите неравенство  $x=3$

Урок 60

$f(x) = \frac{2x-3}{\sqrt{(2x-1)(x^2+5)}}$

$\varnothing: \begin{cases} 2x-1 > 0 \\ x^2+5 > 0 \end{cases} \Leftrightarrow \begin{cases} x > \frac{1}{2} \\ x \in \mathbb{R} \end{cases}$

$\varnothing = (\frac{1}{2}; +\infty)$

