

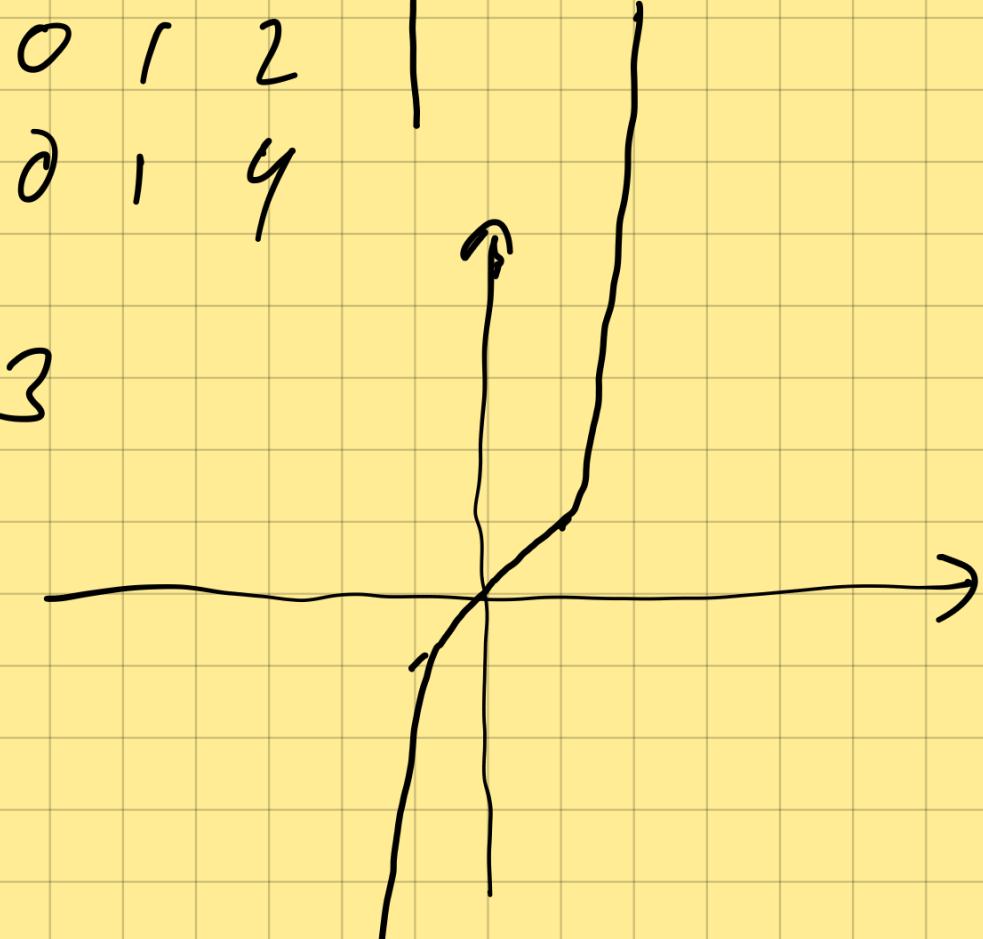
$$1) y = x^2$$



$$y = x^2$$

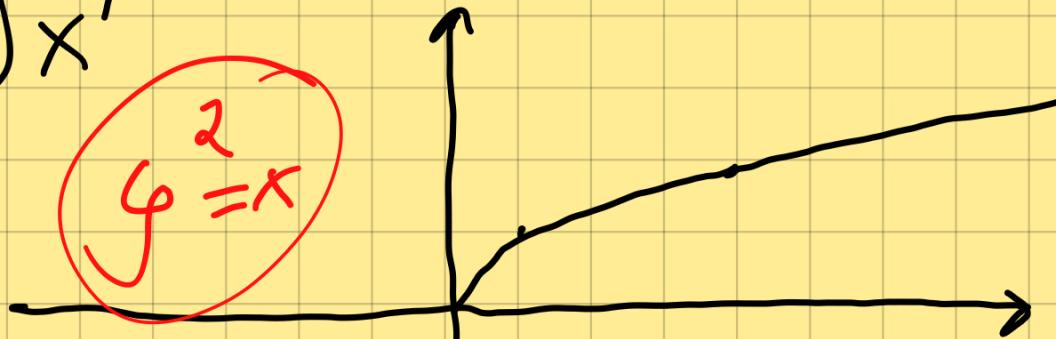
$$\begin{matrix} -2 & -1 & 0 & 1 & 2 \\ y & 4 & 1 & 0 & 1 & 4 \end{matrix}$$

$$y = x^3$$

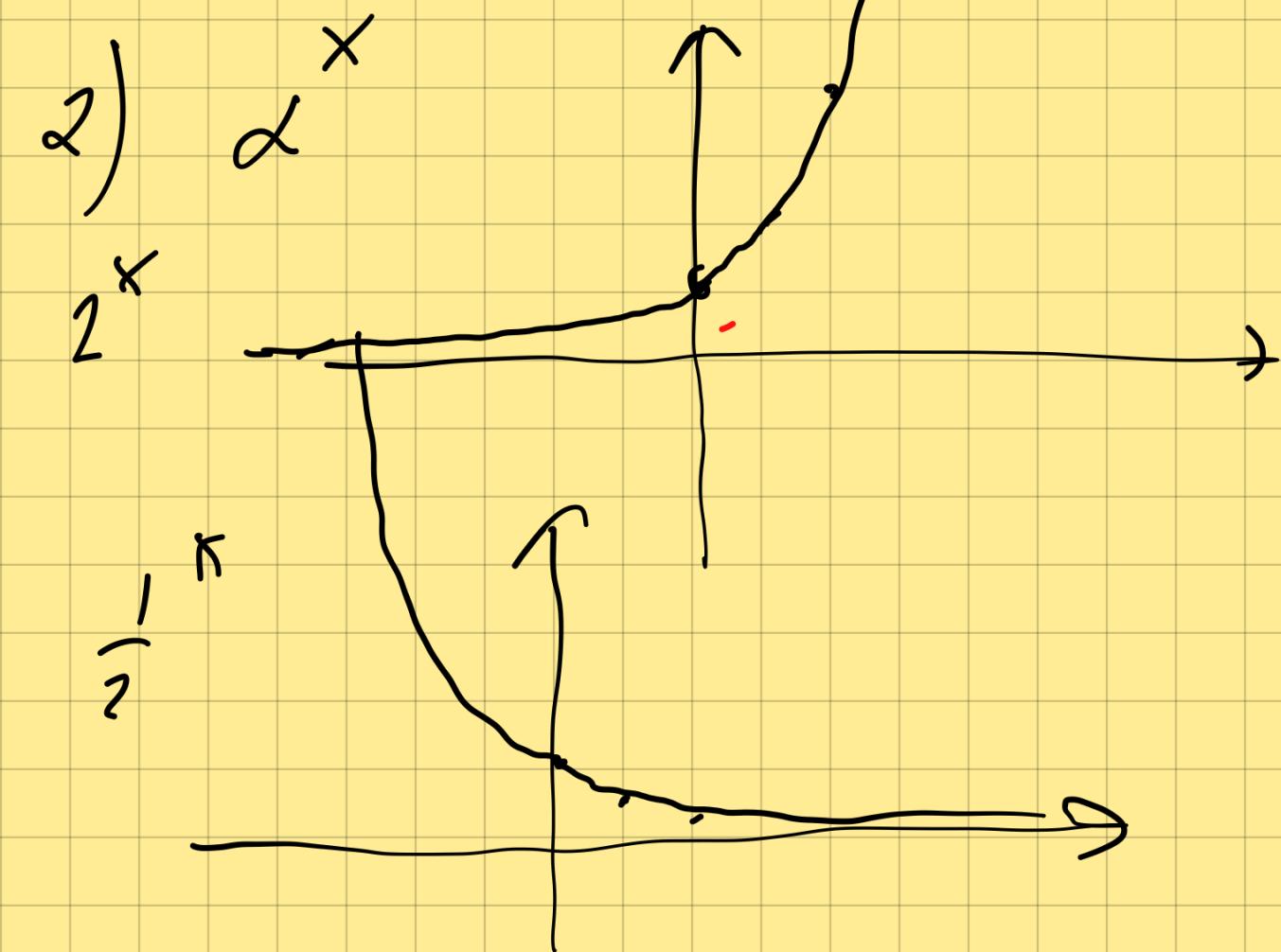


$$\begin{array}{cccc}
 -2 & -1 & 0 & 1 2 \\
 -8 & -1 & 0 & 1 8
 \end{array}$$

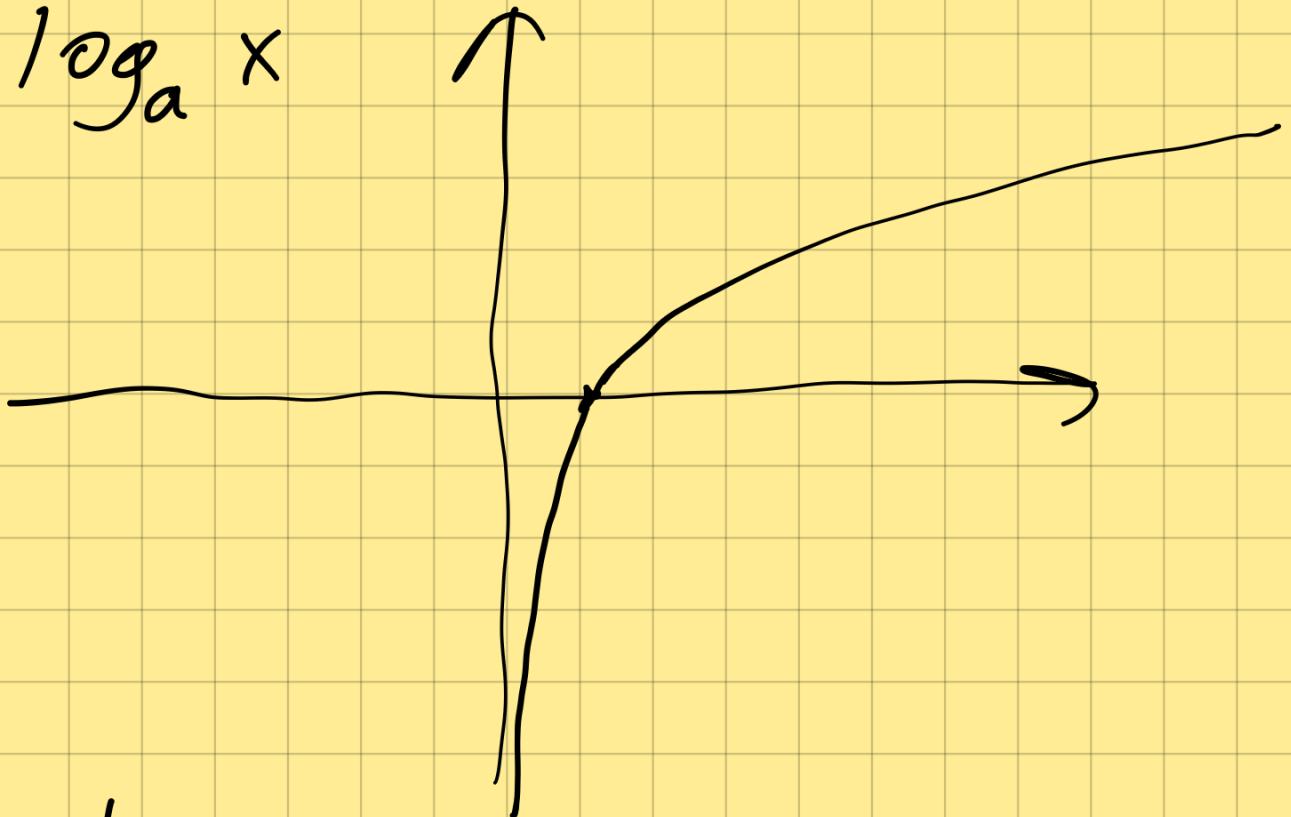
$$\begin{aligned}
 x^{\frac{1}{2}} &= \sqrt{x} & x \geq 0 \\
 y &= \sqrt{x}
 \end{aligned}$$



$$\begin{array}{cccc}
 x & 0 & 1 & 4 \\
 y & 0 & 1 & 2
 \end{array}$$



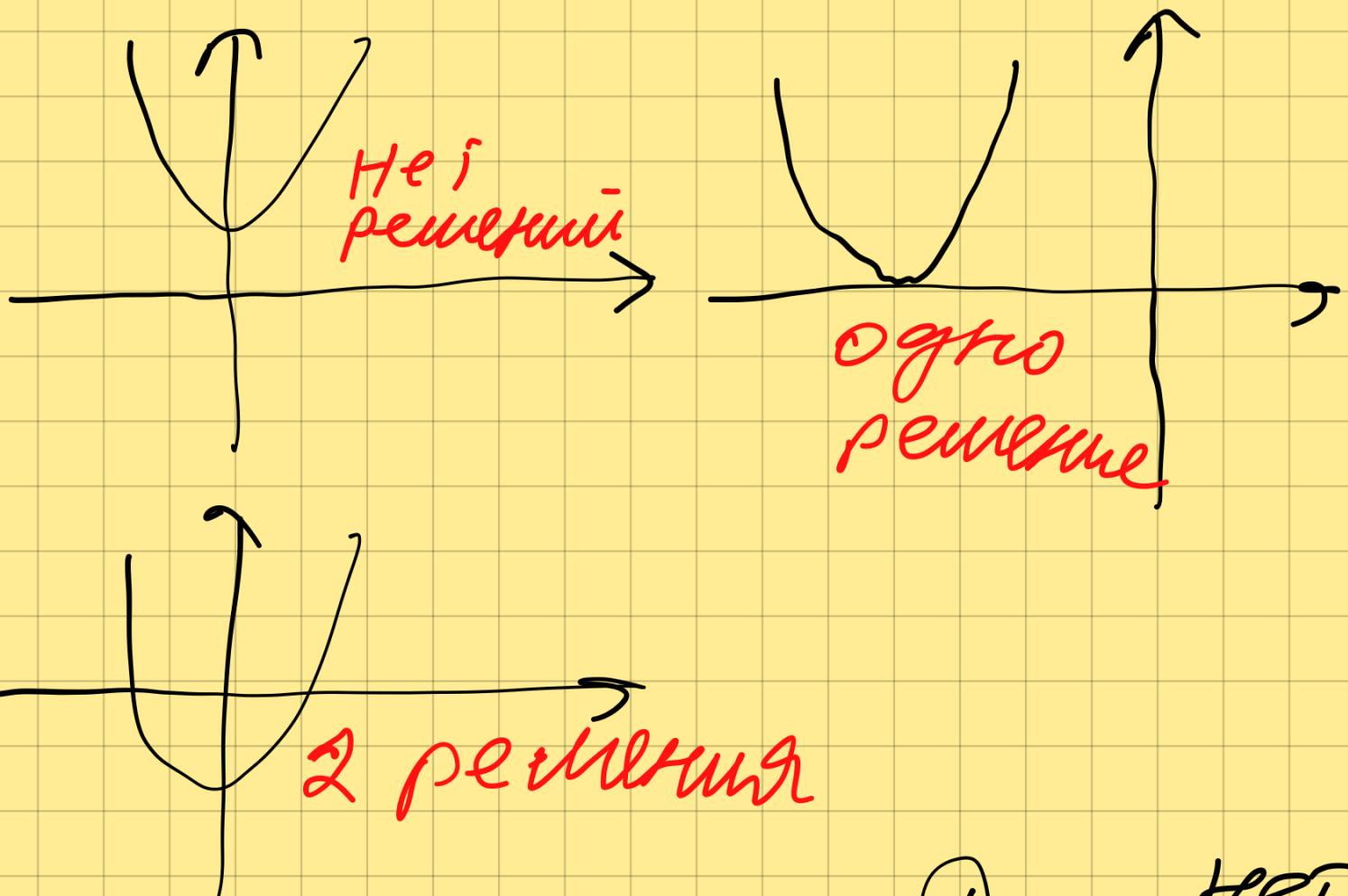
3) $\log_a x$



4) $\frac{1}{x}$ гипербола



$$ax^2 + bx + c = 0$$



$$D = b^2 - 4ac$$

$D < 0$ нет

$D = 0$ одно

$D > 0$ два

$$x^2 + \frac{b}{a}x + \frac{c}{a} = 0$$

$$x^2 + b'x + c' = 0$$

$$(a+b)^2 = a^2 + 2ab + b^2$$

$$(x+a)^2 = x^2 + 2ax + a^2$$

$$\left(x + \frac{b'}{2}\right)^2 - \frac{b'^2}{4} + c'' = 0$$

$$\left(x + \frac{b'}{2}\right)^2 - c''$$

$$x = -\frac{b'}{2}$$

$$x_1, 2 = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$x^2 + bx + c = (x - x_1)(x - x_2)$$

$$x^2 + 5x + 6 = 0$$

$$D = 25 - 6 \cdot 14 = 1 > 0$$

$$x_{1,2} = \frac{-5 \pm \sqrt{1}}{2} \quad x_1 + x_2 = -5$$

$$x_1 \cdot x_2 = 6$$

$$x_1 = -3 \quad x_2 = -2$$

$$(x+3)(x+2)$$

$$x^2 + bx + c = (x - x_1)(x - x_2)$$

$$x^2 + \cancel{b}x + \cancel{c} = x^2 - (x_2 + x_1)x + x_1 x_2$$

$$x_2 + x_1 = -b$$

$$x_1 x_2 = c$$

$$4x - 3 > 37x - 50$$

$$+50 \qquad \qquad \qquad +50$$

$$-3 > 33x - 50$$

$$47 > 33x$$

$$33x < 47$$

$$x < \frac{47}{33}$$

$$x \in \left(-\infty; \frac{47}{33} \right)$$

1) $a > b$

$$-a < -b$$

$$\frac{1}{a} < \frac{1}{b}$$

$$a > b$$

$$a + c > b + c$$

$$c \cdot a > c \cdot b \quad c > 0$$

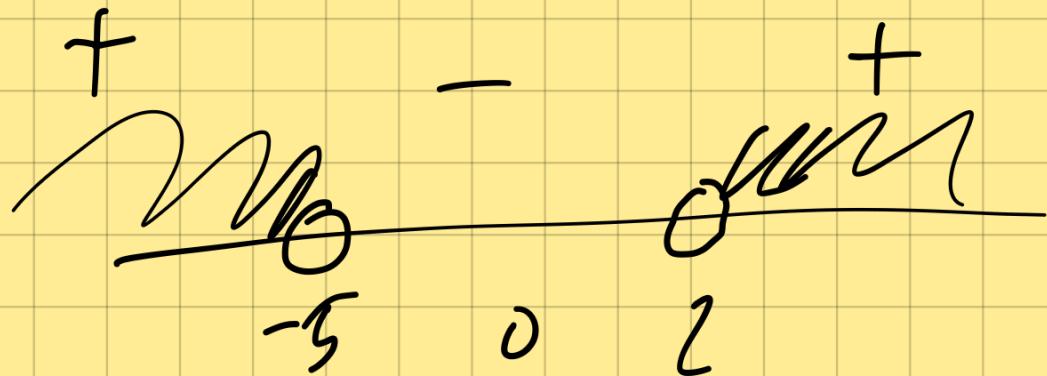
2) $x^2 + 3x > 10$

$$x^2 + 3x - 10 > 0$$

$$5x_1 + x_2 = -3$$

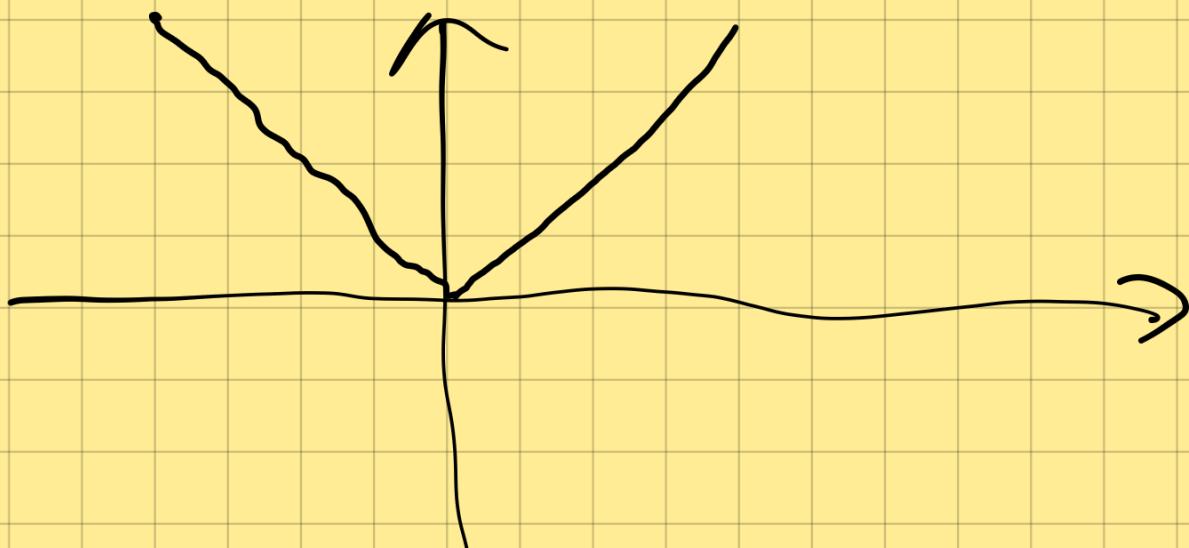
$$\left\langle x_1 \cdot x_2 = -10 \right.$$

$$x_1 = -5 \quad x_2 = 2$$



$$x \in (-\infty; -5) \cup (2; +\infty)$$

$$|x| = \begin{cases} x, & x \geq 0 \\ -x, & x < 0 \end{cases}$$



$$|P - 12| + 4 < 14$$

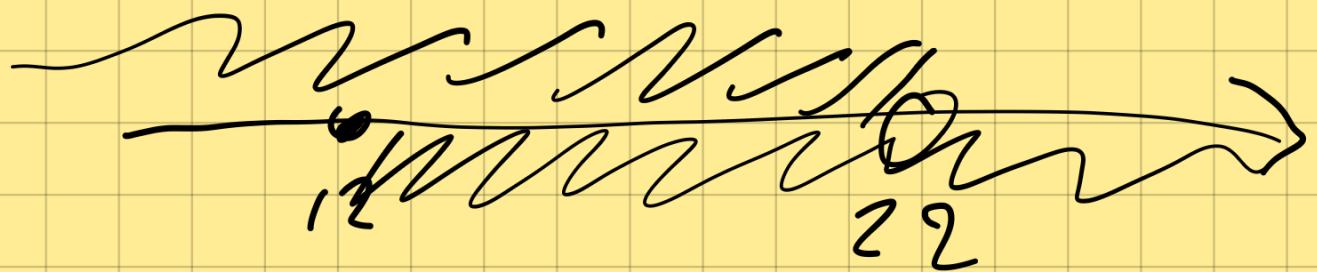
$$p - 12 + 4 < 14$$

$$p - 12 \geq 0$$

$$p - 8 < 14$$

$$p \geq 12$$

$$p < 22$$



$$p \in [12; 22)$$

$$-p + 12 + 4 < 14$$

$$p - 12 < 0$$

$$-p + 16 < 14$$

$$p < 12$$

$$-p < -2$$

$$p > 20$$

$$p \in (2; 12)$$

$$p \in (2; 22)$$

$$|x-3| > |2x-5|$$

$$x-3 \leq 0$$

$$x = 3$$

$$2x-5 = 0$$

$$x = 2,5$$



$$x < 2,5$$

$$2,5 \leq x \leq 3$$

$$x > 3$$

$$-(x-3) > -(2x-5)$$

$$x-3 < 2x-5$$

$$x > 2$$

$$x \in (2; 2,5)$$

$$-x+3 > 2x-5$$

$$-3x > -8$$

$$x < \frac{8}{3}$$

$$x < 2\frac{2}{3}$$

$$x \in [2,5, 2\frac{2}{3})$$

$$-x > -2$$

$$x < 2$$

$$x \in (2; 2\frac{2}{3})$$

$$\frac{a}{b} \cdot \frac{c}{d} = \frac{ac}{bd}$$

$$\frac{2}{5} \cdot \frac{3}{17} = \frac{2 \cdot 3}{5 \cdot 17} = \frac{6}{85}$$

$$\frac{a}{b} + \frac{c}{d} = \frac{ad + cb}{bd}$$

$$\frac{2}{3} + \frac{4}{5} = \frac{10 + 12}{15} = \frac{22}{15} = 1\frac{7}{15}$$

$$\frac{1}{2} + \frac{1}{6} = \frac{4}{6} = \frac{2}{3} \quad - \frac{2}{15} \quad \frac{15}{7}$$

$$\frac{a}{b} : \frac{c}{d} = \frac{a}{b} \cdot \frac{d}{c}$$

$$\frac{a}{\frac{b}{c}} = \frac{ac}{b}$$

$$\frac{\frac{a}{b}}{c} = \frac{a}{b c}$$