

Solve the following inequalities:

$$\frac{x(x^2-4)}{x^2+2x-3} \leq 0$$

$$\frac{x}{2} - 3 \geq 4x + \frac{5}{2}$$

$$\frac{x+13}{x-3} > \frac{7}{x-2}$$

$$\frac{2x-1}{x-1} \leq \frac{15}{x+3}$$

$$|5x - 4| \geq 6$$

$$\left| \frac{1}{3x+4} \right| \leq 5$$

Note: **NEVER** multiply an inequality through by a variable! Instead, bring everything to one side and get a common denominator.

- Find the equation of the line passing through the points $(2, 3)$ and $(7, -1)$.
- Find the center and the radius of the circle given by $x^2 + y^2 = 2x - 6y + 5$.
- Find the shortest distance from the point $(6, 4)$ and the line $2x + y = 4$.