

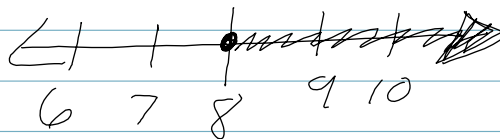
2.5 Inequalities

- use interval notation
- solve Linear Ineq & Compound ineq.
- find exact solutions
no decimal, but simplest Radical form.

$$\textcircled{1} \quad \begin{array}{ccc} x - 3 & \geq & 5 \\ +3 & & +3 \end{array}$$

Inequality Notation

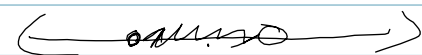
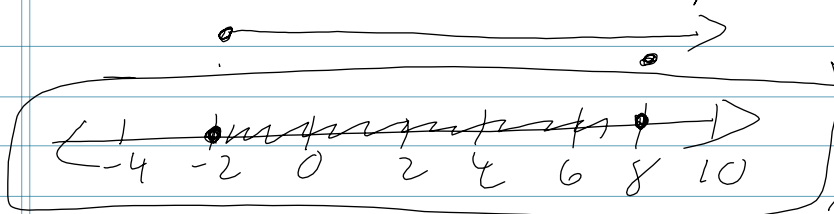
$$\boxed{x \geq 8}$$



interval notation

$$\boxed{[8, +\infty)}$$

$$\textcircled{2} \quad -5 \leq 2x - 1 \leq x + 7$$



$$\begin{array}{ccc} -5 \leq 2x - 1 \\ +1 & & +1 \end{array}$$

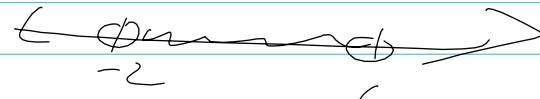
$$\frac{-4}{2} \leq \frac{2x}{2}$$

$$-2 \leq x$$

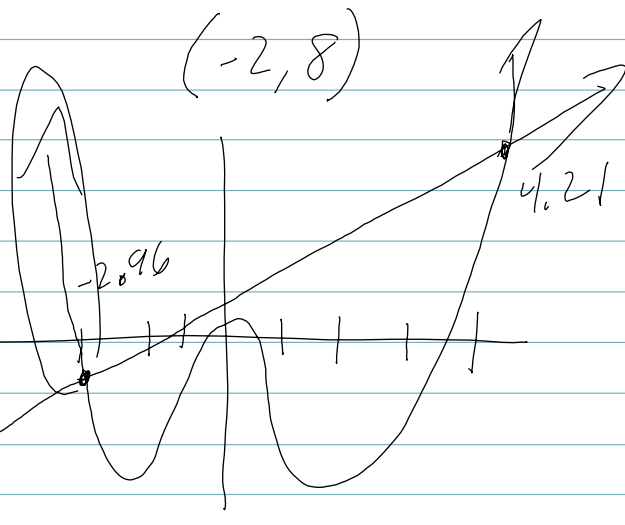
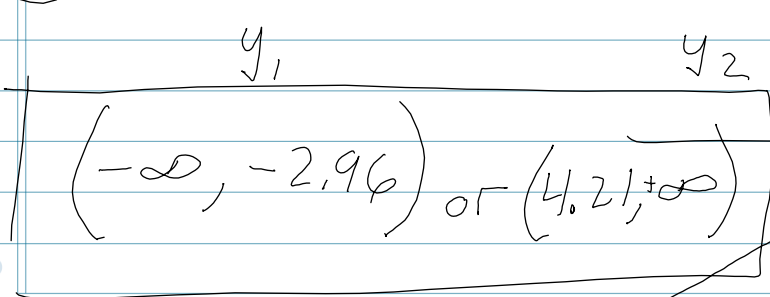
$$\boxed{[-2, 8]}$$

$$\begin{array}{ccc} 2x - 1 \leq x + 7 \\ -x + 1 & & -x + 1 \end{array}$$

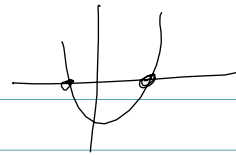
$$x \leq 8$$



$$\textcircled{3} \quad x^4 - x^3 - 12x^2 > 4x + 10$$



2.5 cont

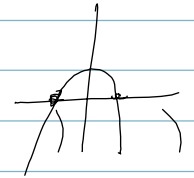


$$x^2 + 3x - 2 \leq 0$$

$$[-1, 3]$$

$$\begin{aligned} a &= 1 \\ b &= 3 \\ c &= -2 \end{aligned}$$

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

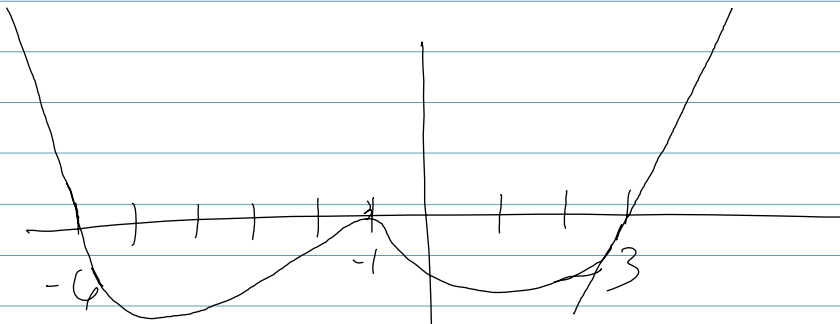


$$x = \frac{-3 \pm \sqrt{9 + 8}}{2} = \frac{-3 \pm \sqrt{17}}{2}$$

$$\left[\frac{-3 - \sqrt{17}}{2}, \frac{-3 + \sqrt{17}}{2} \right]$$

~~(x-3)(x+6)(x+1)^4 \leq 0~~

$$(x-3)(x+6)(x+1)^4 \leq 0$$



$$[-6, -1] \text{ or } [-1, 3]$$