

b.3 Multi-Step Inequalities

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Steps to Solving Multi-Step ~~Equ.~~ ^{Inequality.}

- ① Simplify: Dist. & Comb. Like Terms
- ② Collect Variables: Get the Var. on one side.
- ③ Inverse Operation: Get the Var. by Itself
- ④ Check But... We need to switch the Inequality Sign if we $\times$ or $\div$ by a Negative #.
- ⑤ Graph

$$3x + 5 = 17$$

$$\frac{3x}{3} = \frac{12}{3}$$

$$\underline{\underline{x = 4}}$$

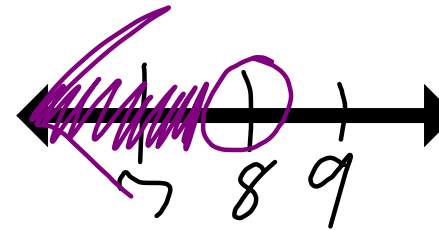
Goal:
Get x by
itself

ex 1) $2y - 9 < 7$

$\quad \quad +9 \quad +9$

$\frac{2y}{2} < \frac{16}{2}$

$y < 8$



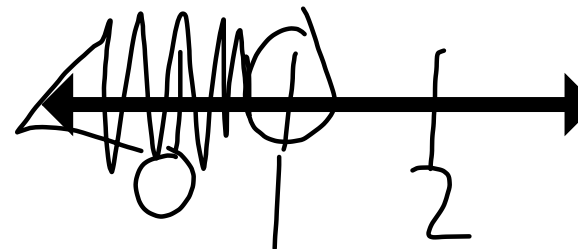
$-5 - x > 4$

$\quad \quad -5$

$-x > 9$

$x < -9$

Do this first
Since we're by -1



$$\text{ex 3)} \quad 3(x+4) \leq 7$$

$$3(x) + 3(4) \leq 7$$

$$3x + 12 \leq 7$$

$$\underline{-12} \quad \underline{-12}$$

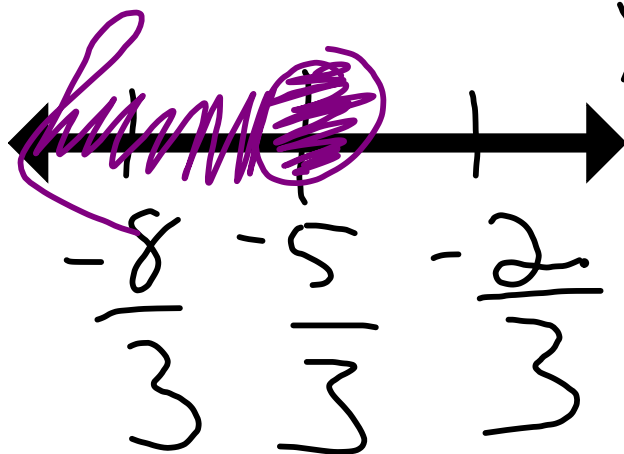
$$\frac{3x}{3} \leq \frac{-5}{3}$$

$$3x \leq -5$$

$$x \leq -\frac{5}{3}$$

$$x \leq -\frac{5}{3}$$

$$\frac{3}{3}$$



ex4) $-2(x+1) < 2$

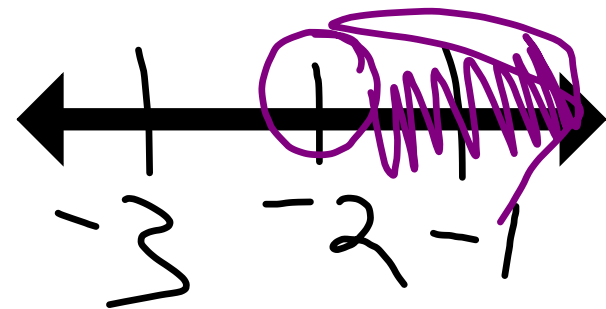
$$-2(x) + -2(1) < 2$$

$$-2x - 2 < 2$$

$$+2 \quad +2$$

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

$$x > -2$$



ex 5) $2x - 3 \geq 4x + 1$

$-2x$

$-2x$

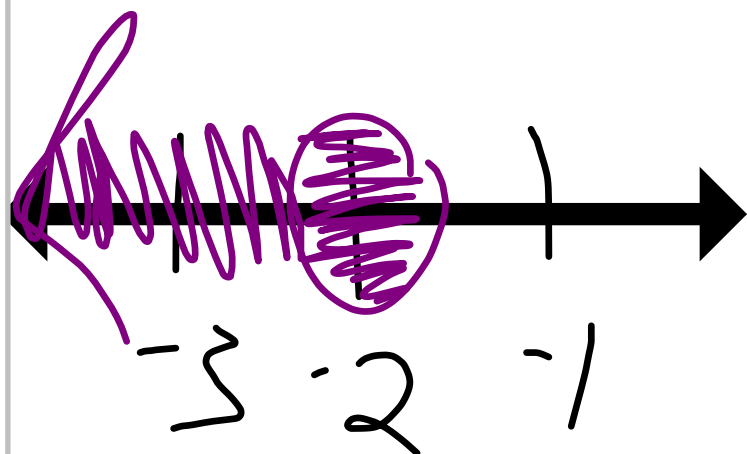
$-3 \geq 2x + 1$

-1

-1

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

$-2 \geq x$



O.T.L.

① Solve + Graph

Pg 339-340:

20, 24, 26-31(a)

33-41(o), 49, 50