

Section 2.5: cont'd

Thursday, October 10, 2013

9:30 AM

example:

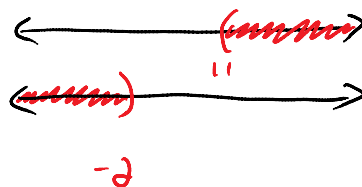
solve the following, writing the solution set in interval notation, and graphing it

$$x - 5 > 6 \quad \text{or} \quad 2 - x > 4$$

$$x > 11$$

$$-x > 2$$

$$x < -2$$



$$(-\infty, -2) \cup (11, \infty)$$

$$60 \left(\frac{1}{4}x - \frac{1}{3} \right) > \left(-\frac{1}{5} \right) 60$$

and

$$\frac{1}{2}x \leq 2$$

$$15x - 20 > -12$$

$$x \leq 4$$

$$15x > 8$$

$$x > 8/15$$

$$\left(\frac{8}{15}, 4 \right]$$



$$(\frac{8}{15}, 4]$$



$$\frac{3}{4}x < 9$$

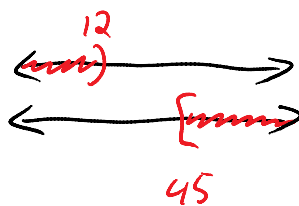
and

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

$$3x < 36$$

$$x < 12$$

$$x \geq 45$$



notation:

consider $x > 5$ and $x \leq 8$

you can write this as $5 < x \leq 8$

note: you can use this notation when

→ the operator joining the inequalities is "and"

→ and for $a < x \leq b$,
a must be less than b

example: $-1 \leq y \leq 10$ ✓

$-1 \leq y \leq -10$ ✗

Corresponds to empty set

note: $a \leq x \leq a$ means $x = a$

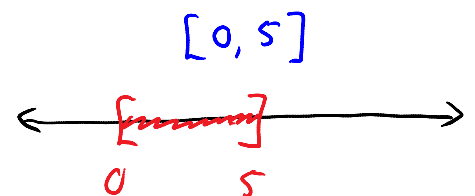
$a < x \leq a$ } means empty set

$a < x < a$ }

Solve, writing the solution set in interval notation and graphing it

$$4 - 4 \leq x - 4 + 4 \leq 1 + 4$$

$$0 \leq x \leq 5$$



$$-1 \leq 3 - 2x < 11$$

$$-4 \leq -2x < 8$$

$$2 \geq x > -4 \quad (-4, 2]$$

$$2 \geq x > -4$$

$$-4 < x \leq 2$$

$$(-4, 2]$$

