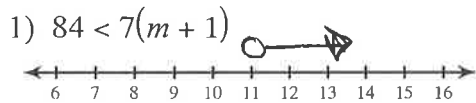


Review for PC #2 - Unit 1

Solve each inequality and graph its solution.



$$84 < 7m + 7$$

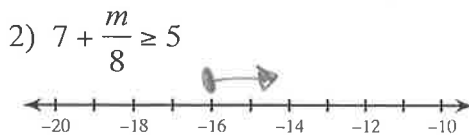
$$\underline{-7 \quad -7}$$

$$77 < 7m$$

$$\underline{\quad \quad \quad 7 \quad \quad \quad 7}$$

$$11 < m$$

$m > 11$

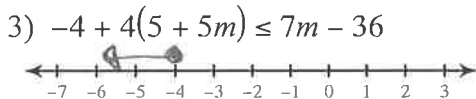


$$7 + \frac{m}{8} \geq 5$$

$$\underline{-7 \quad -7}$$

$$8 \cdot \frac{m}{8} \geq -2 \cdot 8$$

$$m \geq -16$$



$$-4 + 20 + 20m \leq 7m - 36$$

$$16 + 20m \leq 7m - 36$$

$$\underline{-7m \quad -7m}$$

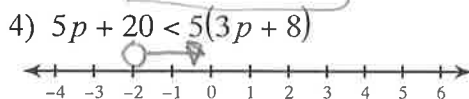
$$16 + 13m \leq -36$$

$$\underline{-16 \quad -16}$$

$$13m \leq -52$$

$$\underline{\quad \quad \quad 13 \quad \quad \quad 13}$$

$$m \leq -4$$



$$5p + 20 < 15p + 40$$

$$\underline{-5p \quad -5p}$$

$$20 < 10p + 40$$

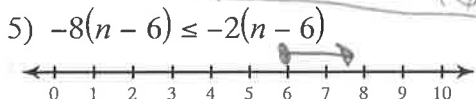
$$\underline{-40 \quad -40}$$

$$-20 < 10p$$

$$\underline{\quad \quad \quad 10 \quad \quad \quad 10}$$

$$-2 < p$$

$p > -2$



$$-8n + 48 \leq -2n + 12$$

$$\underline{+8n \quad +8n}$$

$$48 \leq 6n + 12$$

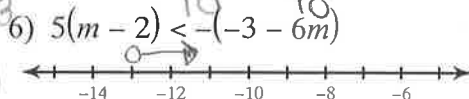
$$\underline{-12 \quad -12}$$

$$36 \leq 6n$$

$$\underline{\quad \quad \quad 6 \quad \quad \quad 6}$$

$$6 \leq n$$

$n \geq 6$



$$5m - 10 < 3 + 6m$$

$$\underline{-5m \quad -5m}$$

$$-10 < 3 + 1m$$

$$\underline{-3 \quad -3}$$

$$-13 < m$$

$m > -13$

Translate the words into an inequality and graph. Then find all of the choices that would have this graph as a solution.

7) A number is at least -3.

$x \geq -3$

- A) $x + 23 \geq -4(x - 2)$
- B) $2x + 7 - x \geq 2x + 4$
- C) $-6x \leq 18$
- D) $2(x + 1) \leq 3x + 5$

d) $2x + 2 \leq 3x + 5$

$$\underline{-2x \quad -2x}$$

$$2 \leq x + 5$$

$$\underline{-5 \quad -5}$$

$$-3 \leq x$$

$x \geq -3$

a) $x + 23 \geq -4x + 8$

$$\underline{+4x \quad +4x}$$

$$5x + 23 \geq 8$$

$$\underline{-23 \quad -23}$$

$$5x \geq -15$$

$$\underline{\quad \quad \quad 5 \quad \quad \quad 5}$$

$$x \geq -3$$

b) $2x + 7 - x \geq 2x + 4$

$$\underline{-x \quad -x}$$

$$x + 7 \geq 2x + 4$$

$$\underline{-x \quad -x}$$

$$7 \geq x + 4$$

$$\underline{-4 \quad -4}$$

$$3 \geq x$$

$x \leq 3$

c) $-6x \leq 18$

$$\underline{-6 \quad -6}$$

$$x \geq -3$$

Solve each compound inequality and graph its solution.

8) $24 \leq 3x < 27$



$$\frac{24}{3} \leq \frac{3x}{3} \quad \frac{3x}{3} < \frac{27}{3}$$

$$8 \leq x < 9$$

9) $2x > 0$ or $x - 3 < -5$

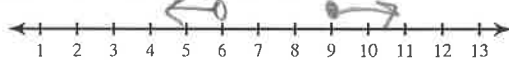


$$\frac{2x}{2} > \frac{0}{2} \quad x - 3 < -5$$

$$\phantom{\frac{2x}{2}} $$

$$x > 0 \text{ or } x < -2$$

10) $-3 - 6n > -39$ or $6n - 10 \geq 44$

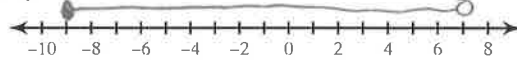


$$\frac{-3 - 6n}{+3} > \frac{-39}{+3} \quad \frac{6n - 10}{+10} \geq \frac{44}{+10}$$

$$\frac{-6n}{-6} > \frac{-36}{-6} \quad \frac{6n}{6} \geq \frac{54}{6}$$

$$n < 6 \text{ or } n \geq 9$$

11) $-17 \leq 2n + 1 \leq 15$



$$\frac{-17 \leq 2n + 1}{-1 \quad -1} \quad \frac{2n + 1 \leq 15}{-1 \quad -1}$$

$$\frac{-18 \leq 2n}{2 \quad 2} \quad \frac{2n \leq 14}{2 \quad 2}$$

$$-9 \leq n \leq 7$$

12) The French club is sponsoring a bake sale. If their goal is to raise at least \$140, how many pastries must they sell at \$3.50 each in order to meet that goal? Write and solve the inequality.

$$\frac{3.5x}{3.5} \geq \frac{140}{3.5}$$

$$x \geq 40 \text{ pastries}$$

13) Four times the quantity of the sum of a number and 15 is at least 120 and no more than 165. Write and solve a compound inequality to find all possible values of x.

$$120 \leq 4(x + 15) \leq 165$$

$$15 \leq x \leq \frac{165}{4}$$

$$\frac{120 \leq 4x + 60}{-60 \quad -60}$$

$$\frac{60 \leq 4x}{4 \quad 4}$$

$$15 \leq x$$

$$\frac{4x + 60 \leq 165}{-60 \quad -60}$$

$$4x \leq 105$$

$$x \leq 41.25$$

$$x \leq \frac{105}{4}$$

Write an algebraic proof for each equation.

14) $8(-2a - 8) = -160$

$$\frac{-16a - 64 = -160}{+64 \quad +64}$$

$$\frac{-16a = -96}{-16 \quad -16}$$

$$a = 6$$

given
Dist. POE
Add POE
Simplify
Div. POE
Simplify

15) $-90 = 2(7k + 4)$

$$\frac{-90 = 14k + 8}{-8 \quad -8}$$

$$\frac{-98 = 14k}{14 \quad 14}$$

$$-7 = k$$

given
Dist. POE
Subt. POE
Simplify
Divide POE
Simplify

16) $-190 = -5(7x - 4)$

$$\frac{-190 = -35x + 20}{-20 \quad -20}$$

$$\frac{-210 = -35x}{-35 \quad -35}$$

$$6 = x$$

given
Dist. POE
Subt. POE
Simplify
Div. POE
Simplify

17) $3(7n - 4) = -117$

$$\frac{21n - 12 = -117}{+12 \quad +12}$$

$$\frac{21n = -105}{21 \quad 21}$$

$$n = -5$$

given
Dist. POE
Add POE
Simplify
Div. POE
Simplify