

Warmup:

12 weeks

Charles is saving \$5 each week. He earns an extra \$15 by mowing his neighbor's lawn. How many weeks will he need to save in order to have at least \$75?

Let $x = \#$ of weeks

a) Write an inequality to represent the situation. Be sure to define your variable.

$$5x + 15 \geq 75$$

b) Solve the inequality and answer the question.

$$\begin{array}{r} 5x + 15 \geq 75 \\ -15 \quad -15 \end{array}$$

$$\frac{5x}{5} \geq \frac{60}{5}$$

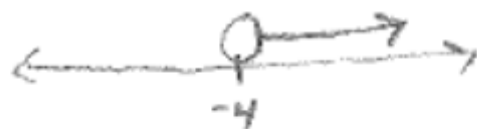
$$x \geq 12$$

More than
 $5x + 15 > 75$
 $\rightarrow x > 12$
 13 weeks

- 1) Solve the inequality and graph its solution. 2) Solve the inequality and graph its solution.

$$\frac{x}{2} - 4 > -6 \quad \frac{x}{2} > -2$$

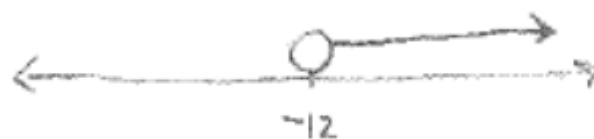
$$x > -4$$



$$-2 < 6 + \frac{2}{3}g \quad -8 < \frac{2}{3}g$$

$$\left(\frac{3}{2}\right) \frac{2}{3} \quad \frac{2}{3}$$

$$-12 < g$$

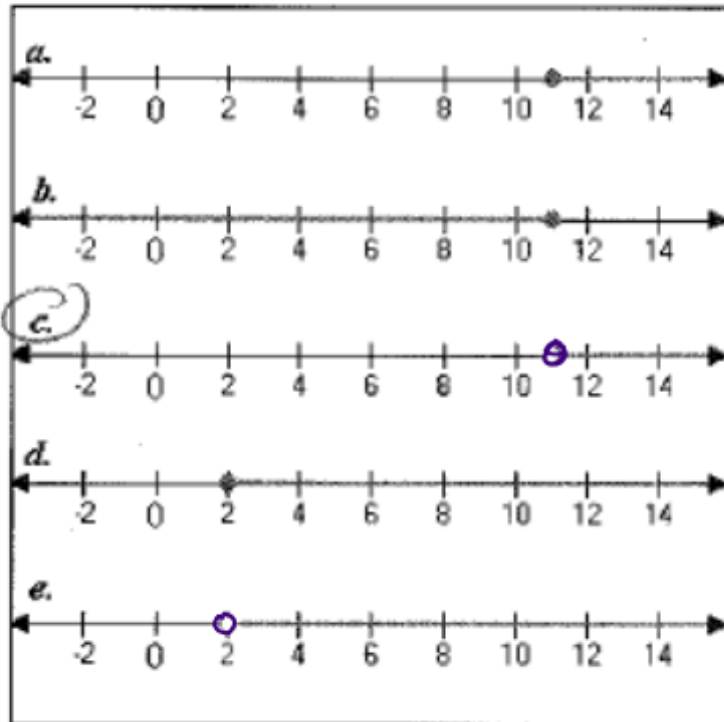


3)

Solve the inequality. Then match its solution with one of the graphs shown.

$$-4x + 3 < -41$$

$$\begin{aligned} \frac{-4x}{-4} &< \frac{-44}{-4} \\ x &> 11 \end{aligned}$$



- 4) Elisa won 40 lollipops playing basketball at the school fair. She gave two to every student in her math class. She has at least 7 lollipops left.

a) Write an inequality to represent the situation. Be sure to define your variable.

b) Solve the inequality to find the maximum number of students in her class.

a) let $n = \#$ of students in class

$$40 - 2n \geq 7$$

$$-2n \geq -33$$

$$n \leq 16.5$$

$$b) \quad \begin{array}{r} 40 - 2n \geq 7 \\ -40 \quad -40 \end{array}$$

$$\begin{array}{r} -2n \geq -33 \\ \frac{-2n}{-2} \geq \frac{-33}{-2} \\ n \leq 16.5 \end{array}$$

maximum of 16 students in her class.

5) More than 450 students went on a field trip. Ten buses were filled and 5 more students traveled in a car.

a) Write an inequality to represent the situation. Be sure to define your variable.

b) Solve the inequality to find the minimum number of people on each bus.

let $n = \#$ of students per bus

$$a) \quad 10n + 5 > 450$$

$$b) \quad 10n + 5 > 450$$

$$\frac{10n}{10} > \frac{445}{10}$$

$$n > 44.5$$

minimum of 45 people per bus

~~$$n = 44.5$$~~

6) Bill spent less than \$26 on a magazine and five composition books. The magazine cost \$4.

a) Write an inequality to represent the situation. Be sure to define your variable.

b) Solve the inequality to find the maximum cost of each composition book.

a) let $c =$ \$ per composition book

$$5c + 4 < 26$$

b) $5c + 4 < 26$

$$\frac{5c}{5} < \frac{22}{5}$$

* $c < 4.40$ *

maximum cost of \$4.39 per book

7) Amanda rented a bike from Shawna's Bikes. They charged her \$2 per hour, plus a \$10 fee. Amanda paid less than \$27.

a) Write an inequality to represent the situation. Be sure to define your variable.

b) Solve the inequality to find the maximum number of hours Amanda rented the bike.

a) let $h = \text{max. \# of hours}$

$$2h + 10 < 27$$

b) $2h + 10 < 27$

$$\frac{2h}{2} < \frac{17}{2}$$

$$h < \underline{8.5}$$

maximum of 8 hours 29 minutes

8 hours

Practice with Equations, Inequalities and Word Problems

Quiz #4