

BW-ACT practice #9

prACTice 9

1. The average of three numbers is x . If the first number is y and the second number is z , what is the third number?

A. $\frac{1}{3}x - y - z$ B. $3x - y - z$ C. $x - 3y - 3z$ D. $3x + y + z$

E. $\frac{x+y+z}{3}$

2. If two cowboys leave a ranch at 9:00 am, how far apart will they be at 11:00 am if one travels directly north at 20 mph and the other travels directly west at 15 mph?

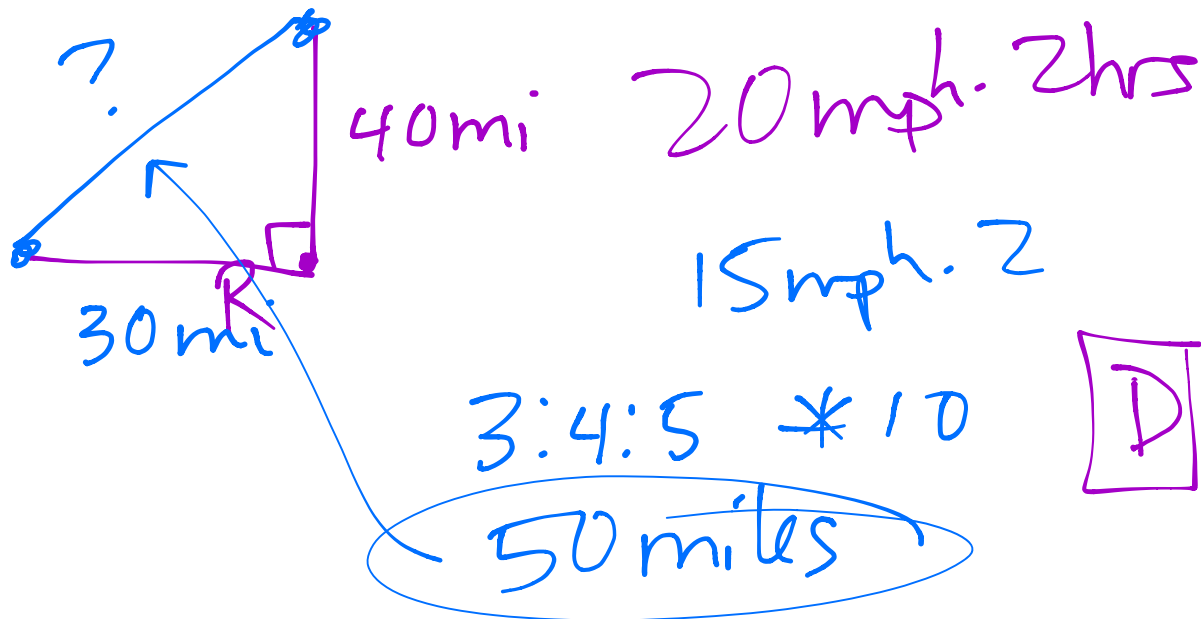
A. 25 miles B. 35 miles C. 70 miles D. 50 miles

E. 500 miles

3. Which of the following is NOT a rational number?

A. $\sqrt{3}$ B. $\sqrt{4}$ C. $\sqrt{\frac{1}{9}}$ D. 2.18333333... E. 1.13342

PLEASE PLACE YOUR HW ON YOUR DESK. THANK YOU.



9-8: how do I solve compound inequalities?

Ex.

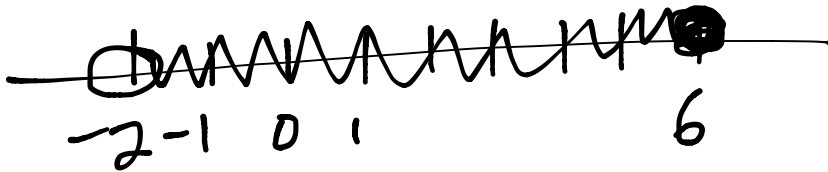
$$-3 < x - 1 \leq 5$$

$$\begin{array}{r} -3 < x - 1 \\ +1 \quad +1 \\ \hline \end{array}$$

$$\begin{array}{r} -2 < x \\ x > -2 \end{array}$$

$$\begin{array}{r} x - 1 \leq 5 \\ +1 \quad +1 \\ \hline \end{array}$$

$$x \leq 6$$



$$(-2, 6]$$

$$\{x \mid -2 < x \leq 6\}$$

$$\{x \mid x > -2 \text{ and } x \leq 6\}$$

Ex. Solve:

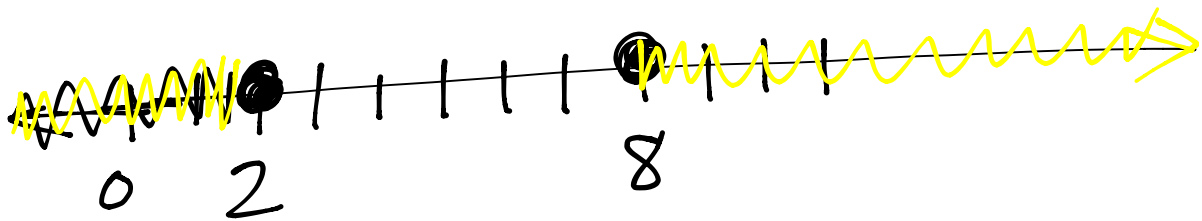
$$3x+1 \leq 7 \quad \text{OR} \quad 2x-9 \geq 7$$

$$3x \leq 6$$

$$x \leq 2$$

$$2x \geq 16$$

$$x \geq 8$$



$$(-\infty, 2] \cup [8, \infty)$$

$$\{x \mid x \leq 2 \text{ or } x \geq 8\}$$

Solve:

$$\textcircled{1} -8 \leq 3x-20 < 52$$

$$\textcircled{2} 3(5x-2) < 24 \text{ or } 6x-4 > 4+5x$$

$$3(5x-2) < 24 \text{ OR } 6x-4 > 4+5x$$

$$15x-6 < 24 \qquad 6x > 8+5x$$

$$15x < 30 \qquad x > 8$$

$$x < 2$$

~~2~~ 8

$$(-\infty, 2) \cup (8, \infty)$$

$$\{x \mid x < 2 \text{ OR } x > 8\}$$

$$-8 \leq 3x-20 < 52$$

$$-8 \leq 3x-20 \mid 3x-20 < 52$$

$$12 \leq 3x \mid 3x < 72$$

$$4 \leq x \mid x < 24$$

\leftarrow \rightarrow

$$\{x \mid 4 \leq x < 24\}$$

$$[4, 24)$$

Quiz - only graded events
 2, 4, 6 \rightarrow 4 pts. each
 8, 10, \rightarrow 6 pts each

$$0.\overline{3} = \frac{1}{3}$$

$$\sqrt{4} = 2$$

$$\frac{y+z+c}{3} = x$$

$$y+z+c = 3x$$

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$$C = 3x - y - z \quad (B)$$

9-8 how do we solve compound inequalities?

Ex. Solve:

$$2x + 1 \leq -7$$

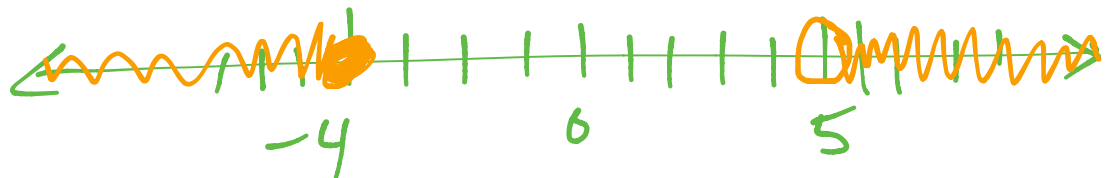
$$2x \leq -8$$

$$x \leq -4$$

$$\text{OR } 3x - 1 > 14$$

$$3x > 15$$

$$x > 5$$



$$(-\infty, -4] \cup (5, \infty)$$

$$\{x \mid x \leq -4 \text{ or } x > 5\}$$

Ex. $18 < 4x - 10 < 50$

$$18 < 4x - 10$$

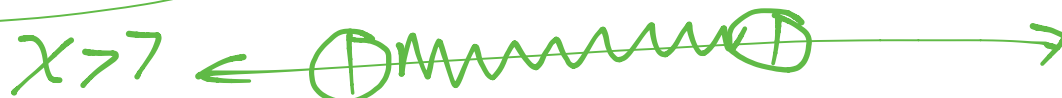
$$28 < 4x$$

$$7 < x$$

$$4x - 10 < 50$$

$$4x < 60$$

$$x < 15$$



$$\left\{ x \mid 7 < x < 15 \right\}$$

(7, 15)

P. 44: 27-32

P. 48: 11-47 all