

Name: Key

Equation Review Quiz

1.

Zeinab is going to a carnival. Suppose it costs \$10 for her to enter the carnival. Each ride costs \$1.50. She has \$25 to spend at the carnival. What is the greatest number of rides that she can go on?

$x = \# \text{ of rides}$

Cost:

$$10 + 1.5x \leq 25$$

$$\begin{array}{r} -10 \\ 1.5x \leq 15 \end{array}$$

$$\frac{1.5x}{1.5} \leq \frac{15}{1.5} \rightarrow x \leq 10$$

to spend:

(Amount spent has to be less than or equal to money you have.)

At most, she can ride 10 rides.

Solution: _____

2.

Big Sean is taking an online algebra class. He submitted this work to his professor. Is he correct? If not, tell him how he can correct his mistake.

$$2(m - 8) < -8 + 3m$$

$$\begin{array}{r} 2m - 16 < -8 + 3m \\ -3m \\ \hline -m - 16 < -8 \end{array}$$

$$\begin{array}{r} -m - 16 < -8 \\ +16 \quad +16 \\ \hline -m < -2 \end{array}$$

$$m > 2$$

Distributed incorrectly.
 $2(m-8) = 2m-16$,
not $2m-16$

$$\begin{array}{r} 2m - 16 < -8 + 3m \\ -3m \\ \hline -m - 16 < -8 \end{array}$$

$$\begin{array}{r} -m - 16 < -8 \\ +16 \quad +16 \\ \hline -m < 8 \end{array}$$

$$\begin{array}{r} -m < 8 \\ \div -1 \quad \div -1 \\ \hline m > -8 \end{array}$$

$$m > -8$$

3.

$$-8x < 48$$

$$\begin{array}{r} -8x < 48 \\ \div -8 \quad \div -8 \\ \hline x > -6 \end{array}$$

$$x > -6$$

Solution: $x > -6$

4.

$$4x - 5 = 2(2x + 1)$$

$$4x - 5 = 4x + 2$$

$$\begin{array}{r} 4x - 5 = 4x + 2 \\ -4x \quad -4x \\ \hline -5 = 2 \end{array}$$

False!

Since this is false, it means there are

No Solutions

Solution: No Solution

5.

Justin Bieber called me yesterday to help him with some math. He solved the equation $x - (4 - x) = 0$ like this. What should I tell him so he gets the correct solution?

$$x - (4 - x) = 0$$

$$x - 4 + x = 0$$

$$-4 = 0$$

No solution

Should be "plus x".
The 2 negatives turn to a positive only.

$$x - 4 + x = 0$$

$$2x - 4 = 0$$

$$\frac{2x}{2} = \frac{4}{2}$$

$$x = 2$$

6.

A family buys airline tickets online. Each ticket costs \$205.00. The family buys travel insurance with each ticket the costs \$25 per ticket. The web site charges a fee \$20 for the entire purchase. The family is charged a total of \$1170.00. How many tickets did the family buy?

$x = \#$ of tickets bought

Costs: $205x + 25x + 20 = 1170$ Total:

$$\begin{array}{r} 230x + 20 = 1170 \\ -20 \quad -20 \\ \hline 230x = 1150 \\ \frac{230x}{230} = \frac{1150}{230} \end{array}$$

$$x = 5$$

The family bought 5 tickets.

Solution: _____

7.

$$b + 4b = -90$$

$$\begin{array}{r} 5b = -90 \\ \frac{5b}{5} = \frac{-90}{5} \end{array}$$

$$b = -18$$

Solution: $b = -18$

8.

Mrs. Wrona needs to rent a moving truck because her neighbors, Beyoncé, Jay Z and baby Blue are too loud, so she is moving far away. Suppose Company A charges a rate of \$80 per day and Company B charges a \$100 fee plus \$30 per day. For what number of days is the cost the same? $100 + 30 \cdot x$

$x = \# \text{ of days}$

<u>Company A:</u>	<u>Company B:</u>
$80x$	$100 + 30x$
$-30x$	$-30x$
$\hline 50x$	$\hline 100$
$\frac{50x}{50}$	$\frac{100}{50} \rightarrow x=2$

The companies cost the same for 2 days.

Solution:

9.

$$3(2x - 6) = 2(3x - 9)$$

$$6x - 18 = 6x - 18$$

$$\begin{array}{r} 6x - 18 \\ -6x \\ \hline \end{array}$$

$$-18 = -18$$

True!

Since this is true, it means there are Infinite Solutions. It is called an Identity.

(Identity)

Solution: Infinite Sol.

10.

$$7s - (s+1) = 4(3+s)$$

$$7s - s - 1 = 12 + 4s$$

$$\begin{array}{r} 6s - 1 = 12 + 4s \\ -4s \\ \hline \end{array}$$

$$\begin{array}{r} 2s - 1 = 12 \\ +1 \quad +1 \\ \hline \end{array}$$

$$2s = 13$$

$$\begin{array}{r} 2s = 13 \\ \frac{2}{2} \quad \frac{2}{2} \\ \hline \end{array}$$

$$s = \frac{13}{2}$$

Solution: $s = \frac{13}{2}$

11.

What mistakes, if any, did Mr. Baughman make when solving this equation?

$$2(1 - 2x) = 4x + 18$$

$$\begin{array}{r} 2 - 4x = 4x + 18 \\ -4x \quad -4x \\ \hline \end{array}$$

$$2 = 18$$

No Solution

$-4x - 4x$ OR $4x$ does not cancel.

Should have added $4x$ to cancel, not subtracted.

$$\begin{array}{r} 2 - 4x = 4x + 18 \\ +4x \quad +4x \\ \hline \end{array}$$

$$\begin{array}{r} 2 = 8x + 18 \\ -18 \quad -18 \\ \hline \end{array}$$

$$\begin{array}{r} -16 = 8x \\ \frac{-16}{8} = \frac{8x}{8} \rightarrow x = -2 \end{array}$$

