

Warm Up:

Solve and justify the steps using properties:

$$6 = 3(2x + 4)$$

$$\begin{array}{r} 6 = 6x + 12 \\ -12 \quad -12 \\ \hline -6 = 6x + 0 \\ \hline -6 = 6x \\ \hline 6 \quad 6 \end{array}$$

$$\begin{array}{r} -1 = x \\ x = -1 \end{array}$$

Distributive  
 sub. POE  
 inverse +  
 Div POE  
 inverse x  
 Symmetric

## Review homework

**16.** 4                      **17.**  $-10$

**18.** 13

**19.**  $3x + 6x + 20 = 92$ ; \$8 per h

**27.**  $\frac{1}{6}$                       **28.** 2

**29.** 9.75 or  $9\frac{3}{4}$                       **30.**  $-4$

**55.** \$15

**56.** The 8 should be distributed to all terms;

$$8\left(\frac{3x}{8} - 1\right) = 8\left(\frac{5}{8}\right) \text{ gives } 3x - 8 = 5$$

and

$$3x = 13 \text{ so } x = 4\frac{1}{3}.$$

$$\begin{array}{r|l}
 3n+5 & =5n-1 \\
 -3n & -3n \\
 \hline
 5 & =2n-1 \\
 +1 & +1 \\
 \hline
 6 & =2n \\
 \frac{6}{2} & =\frac{2n}{2} \\
 3 & =n
 \end{array}$$

$$\begin{array}{r|l}
 24-6r & =6(4-r) \text{ reflexive} \\
 24-6r & =24-6r \\
 +6r & +6r \\
 \hline
 24 & =24 \\
 & \text{reflexive}
 \end{array}$$

All real numbers  
 $\mathbb{R}$

$$\frac{2x-5}{2} = \frac{-x+1}{4}$$

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

$$8x-20 = -2x+2$$

+2x      +2x

$$10x-20 = 2$$

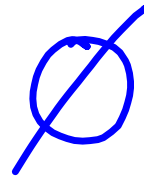
+20      +20

$$\frac{10x}{10} = \frac{22}{10} = \frac{11}{5}$$

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

$$2 = 4$$

NO solution



You have \$320 and save \$10 each week. Your brother has \$445 and spends his income, plus \$15 of his savings each week. When will you and your brother have the same amount in savings? *Write an equation and solve the problem.*

$$320 + 10x = 445 - 15x$$

5 weeks

$x = \text{weeks}$

1.  $8x-6=7x-9$

$x = -3$

2.  $2x+3=2(x-7)$

$x = \emptyset$

3. Verizon charges a \$40 startup fee for a phone, plus an additional \$0.10 for each text message sent. AT&T has a \$35 startup fee, but has an additional \$0.20 fee for each text message sent. After how many text messages will the two plans be equal?

50 texts

4.  $\frac{2}{3}(18p-3) = \frac{1}{3}(-12p-6)$

5.  $\frac{-x+6}{5} = \frac{2x-8}{-8}$

$p = 0$

6. Abby has \$100 in her bank account and adds \$20 per week. Nick has \$60 but adds \$30 per week. After how many weeks will they have the same amount of money?

**Challenge!**

1. Sarah is building a fence for her garden and has 60 feet to work with. The length will be 2 more than 3 times the width. What will the dimensions of her garden be?
  
2. Marc's age is 1 less than twice Ben's age. If the sum of their ages is 35, what are their ages?

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