

Name:

Period:

KEY

**PreAlgebra QUIZ: Building the Equation & Creating the Story of  $x$** 

Rewrite the following expressions with an equivalent expression where *the variable* is as close as possible to the front:

1.  $-3 + 4d$

2.  $-4 - 3x$

3.  $-2 - \frac{4+x}{5}$

4.  $7 - 6(9 + h)$

$4d - 3$

$-3x - 4$

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

$-6(h+9)+7$

Build the equation (show all steps), identify the property used, and then create the story of  $x$ :

5. Truth Statement:  $x = -14$  subtract 4, then divide by 3

Apply the Property of  
Subtraction  
 $-4$

Apply the Property of  
Division  
by 3

$$\begin{aligned} x &= -14 \\ x - 4 &= -14 - 4 \\ x - 4 &= -18 \\ \frac{x - 4}{3} &= \frac{-18}{3} \\ \frac{x - 4}{3} &= -6 \end{aligned}$$

Equation and Story of  $x$ 

$$\frac{x - 4}{3} = -6$$

① subtract 4 from  $x$   
② divide the difference by 3  
③ the solution is  $-6$  when  $x = -14$

6. Truth Statement:  $d = 5$  add 8, then multiply by  $-4$

Apply the Property of  
Addition  
 $+8$

Apply the Property of  
Multiplication  
 $\cdot (-4)$

$$\begin{aligned} d &= 5 \\ d + 8 &= 5 + 8 \\ d + 8 &= 13 \\ -4(d + 8) &= -4(13) \\ -4(d + 8) &= -52 \end{aligned}$$

Equation and Story of  $d$ 

$$-4(d + 8) = -52$$

① Add 8 to  $d$   
② multiply  $(-4)$  to the sum  
③ the solution is  $-52$  when  $d = 5$



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7. Truth Statement:  $k = -14$  subtract 4, then divide by 7

Apply the Property of  
Subtraction  
-4

Apply the Property of  
Division  
by 7

$$\begin{aligned} k &= -14 \\ k - 4 &= -14 - 4 \\ \frac{k - 4}{7} &= \frac{-18}{7} \\ \frac{k - 4}{7} &= -\frac{18}{7} \end{aligned}$$

Equation and Story of  $k$

$$\frac{k - 4}{7} = -\frac{18}{7}$$

- ① Subtract 4 from  $k$
- ② Divide the difference by 7
- ③ the solution is  $-\frac{18}{7}$  when  $k = -14$

8. Truth Statement:  $x = 3$  divide by 9, then subtract 6

Apply the Property of  
Division  
by 9

Apply the Property of  
Subtraction  
-6

$$\begin{aligned} x &= 3 \\ \frac{x}{9} &= \frac{3}{9} \\ \frac{x}{9} - 6 &= \frac{1}{3} - 6 \\ \frac{x}{9} - 6 &= -\frac{17}{3} \end{aligned}$$

Equation and Story of  $x$

$$\frac{x}{9} - 6 = -\frac{17}{3}$$

- ① Divide  $x$  by 9
- ② Subtract 6 from the quotient
- ③ the solution is  $-\frac{17}{3}$  when  $x = 3$

9. Truth Statement:  $r = 3.5$  multiply by 5, then subtract 1.2

Apply the Property of  
Multiplication  
•5

Apply the Property of  
Subtraction  
-1.2

$$\begin{aligned} r &= 3.5 \\ 5(r) &= 5(3.5) \\ 5r &= 17.5 \\ 5r - 1.2 &= 17.5 - 1.2 \\ 5r - 1.2 &= 16.3 \end{aligned}$$

Equation and Story of  $r$

$$5r - 1.2 = 16.3$$

- ① Multiply 5 for  $r$
- ② Subtract 1.2 from the product
- ③ the solution is 16.3 when  $r = 3.5$