# <u>Warm Up</u> <u>Problem of the Day</u> <u>Lesson Presentation</u> <u>Lesson Quizzes</u>

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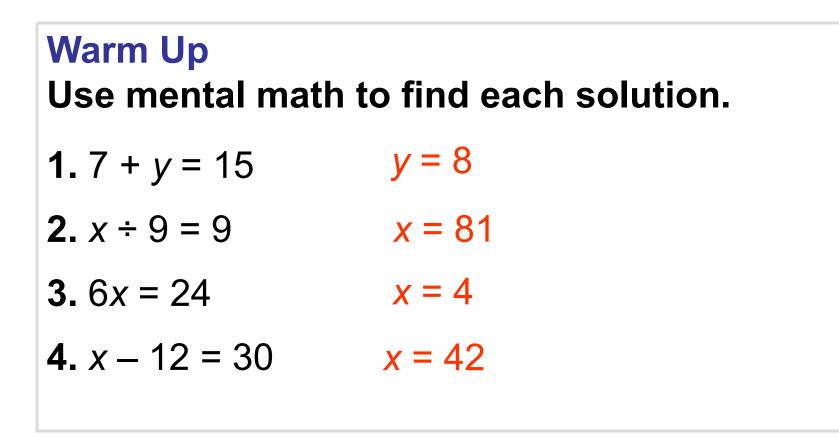
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### **Problem of the Day**

Zelda sold her wet suit to a friend for \$156. She sold her tank, mask, and snorkel for \$85 less than she sold her wet suit. She bought a used wet suit for \$80 and a used tank, mask, and snorkel for \$36. If she started with \$0, how much money does she have left?

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\$111

# Learn to solve one-step equations with integers.



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Inverse Property of Addition						
Words	Numbers	Algebra				
The sum of a number and its opposite, or additive inverse, is 0.	3 + (-3) = 0	a + (–a ) = 0				

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### Additional Example 1A: Solving Addition and Subtraction Equations

Solve each question. Check each answer.

$$-6 + x = -7$$
  
 $-6 + x = -7$   
 $+ 6 + 6$   
 $x = -1$ 

Add 6 to both sides to isolate the variable.

Check

$$-6 + x = -7$$
  
-6 + (-1) = -7  
-7 = -7

Substitute –1 for x.

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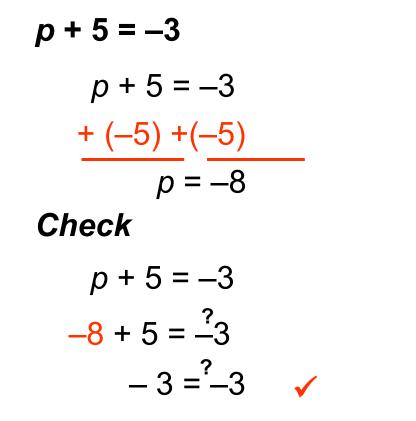
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True.

### Additional Example 1B: Solving Addition and Subtraction Equations

Solve each equation. Check each answer.



Add -5 to both sides.

```
Substitute –8 for p.
True.
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### Additional Example 1C: Solving Addition and Subtraction Equations

Solve each equation. Check each answer.

y - 9 = -40y - 9 = -40+9 +9 Add 9 to both sides. y = -31Check y - 9 = -40-31 - 9 = -40Substitute –31 for y. -40 = 40True.

### **Check It Out: Example 1A**

Solve each equation. Check each answer.

-3 + x = -9-3 + x = -9 + 3 + 3 x = -6

Add 3 to both sides.

Check

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

Substitute –6 for x.

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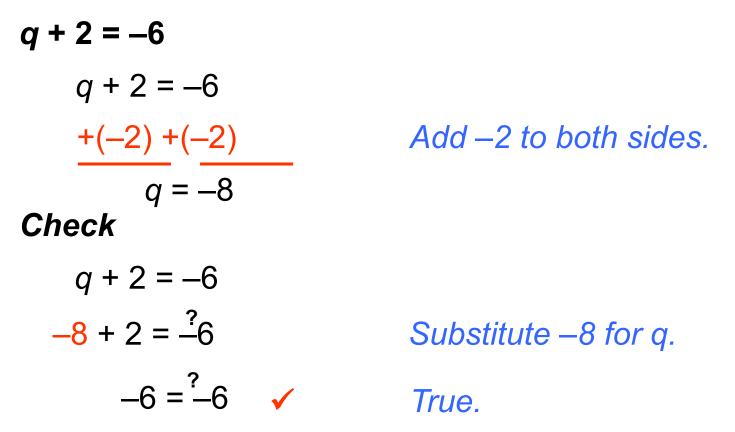
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### **Check It Out: Example 1B**

Solve each equation. Check each answer.



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### **Check It Out: Example 1C**

Solve each equation. Check each answer.

y - 7 = -34  
y - 7 = -34  

$$+7$$
 +7  
y = -27  
Check  
y - 7 = -34  
-27 - 7 =  $^{?}$ 34  
-34 = $^{?}$ -34 ✓ True.  
Add 7 to both sides.  
Add 7 to both sides.  
Substitute -27 for y.  
True.

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### Additional Example 2A: Solving Multiplication and Division Equations

Solve each equation. Check each answer.

$$\frac{b}{-5} = 6$$
$$\frac{b}{-5} = 6$$
$$(-5) \quad (45) = (-5)6$$

Multiply both sides by –5.

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$$b = -30$$

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#### **Additional Example 2A Continued**

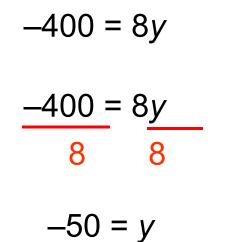
Check  $\frac{b}{-5} = 6$   $\frac{-30}{-5} \stackrel{?}{=} 6$   $6 = 6 \checkmark$  True.  $\frac{b}{-5} = 6.$ 

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### Additional Example 2B: Solving Multiplication and Division Equations

Solve each equation. Check each answer.

-400 = 8y



Divide both sides by 8.

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### Additional Example 2B: Solving Multiplication and Division Equations

Check

-400 = 8*y* Substitute -50 for *y*.

$$-400 = 8(-50)$$
  
 $-400 = -400$   $\checkmark$  True.

### **Check It Out: Example 2A**

#### Solve each equation. Check each answer.

$$\frac{c}{4} = -24$$

$$\frac{c}{4} = -24$$

$$4 \left( \underbrace{\sim}_{4} \right) = 4(-24)$$
Multiply both sides by 4.
$$c = -96$$

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#### **Check It Out: Example 2A Continued**

Check

$$\frac{c}{4} = -24$$

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-24 = -24  $\checkmark$  *True*.

$$\frac{c}{4} = -24.$$

### **Check It Out: Example 2B**

Solve each equation. Check each answer.

-200 = 4x



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$$-50 = x$$

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### **Check It Out: Example 2B Continued**

Check.

-200 = 4x Substitute -50 for x.

-200 = 4(-50) $-200 = -200 \checkmark True.$ 

### **Additional Example 3:** *Business Application*

In 2003, a manufacturer made a profit of \$300 million. This amount was \$100 million more than the profit in 2002. What was the profit in 2002?

Let *p* represent the profit in 2002 (in millions of dollars).

This year's profit 300	is =	100 million 100	More than +	Last year's profit <i>p</i>		
300 = 100 + p <u>-100</u> <u>-100</u> 200 = p						
The profit was \$200 million in 2002						

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The profit was \$200 million in 2002.

### **Check It Out: Example 3**

This year the class bake sale made a profit of \$243. This was an increase of \$125 over last year. How much did they make last year?

Let *x* represent the money they made last year.

This year's profit<br/>243is =125 million<br/>125More than<br/>+Last year's profit<br/>x243 = 125 + x<br/>-125 - 125<br/>118 = x118 = x118 = x

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The class earned \$118 last year.

## **Lesson Quizzes**

Standard Lesson Quiz

Lesson Quiz for Student Response Systems

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#### **Lesson Quiz**

### Solve each equation. Check your answer.

- **1.** -8*y* = -800 **100**
- **2.** *x* 22 = –18 **4**
- **3.**  $-\frac{y}{7} = 7$  -49
- **4.** w + 72 = -21 <u>-93</u>
- 5. Last year a phone company had a loss of \$25 million. This year the loss is \$14 million more last year. What is this years loss?
  \$39 million

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### **Lesson Quiz for Student Response Systems**

- 1. Solve the equation.
- y + 65 = -20
- **A.** *y* = 45
- **B.** *y* = 85
- **C.** y = -45
- **D.**y = -85

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### **Lesson Quiz for Student Response Systems**

- 2. Solve the equation.
- x 25 = -15(A.)x = 10(B.) x = 20(C.) x = 35
- **D.** x = 45

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### **Lesson Quiz for Student Response Systems**

- 3. Solve the equation.
- -10y = -1000
- **A.** y = -200
- **B.** y = -100
- $\bigcirc y = 100$
- **D.** y = 200

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### **Lesson Quiz for Student Response Systems**

4. Solve the equation.  $---= \frac{3}{9}$ A. a = 54B. a = 15C. a = -15D. a = -54

### **Lesson Quiz for Student Response Systems**

5. In an online test, Dick scored –34 points. This was 20 points less than his previous score. What was his previous score?

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- A. 54 points
- **B.** 14 points
- C.–14 points
- **D.**–54 points