Name _____ Date _____ Class _____

LESSON 2-4

Practice A * MUST SHOW WORK !

Equations and Their Solutions

Determine whether the given value of the variable is a solution.

1. $x + 1 = 5$ for $x = 4$ YES
   $4 + 1 = 5 \Rightarrow 5 = 5$ ✓
2. $13 - w = 10$ for $w = 2$ _____
3. $2 \cdot v = 12$ for $v = 10$ _____
4. $14 \div p = 2$ for $p = 7$ _____
5. $8 + w = 11$ for $w = 3$ _____
6. $4t = 20$ for $t = 5$ _____
7. $\frac{12}{s} = 4$ for $s = 3$ _____
8. $6 + d = 15$ for $d = 8$ _____

Circle the letter of the equation that each given solution makes true.

9. $x = 5$
   - **A** $2 + x = 7$
   - **B** $9 - x = 3$
   - **C** $3 \cdot x = 18$
   - **D** $20 \div x = 2$

10. $g = 7$
    - **F** $9g = 16$
    - **G** $8 - g = 1$
    - **H** $11 + g = 17$
    - **J** $g \div 1 = 1$

11. $y = 2$
    - **A** $5 + y = 8$
    - **B** $7 - y = 1$
    - **C** $3 \cdot y = 6$
    - **D** $10 \div y = 20$

12. $m = 9$
    - **F** $10 + m = 20$
    - **G** $m - 4 = 13$
    - **H** $7 \cdot m = 36$
    - **J** $18 \div m = 2$

13. $z = 4$
    - **A** $5z = 20$
    - **B** $12 \div z = 4$
    - **C** $z - 3 = 7$
    - **D** $z + 8 = 4$

14. $a = 8$
    - **F** $2a = 10$
    - **G** $a + 12 = 20$
    - **H** $a \div 4 = 4$
    - **J** $12 - a = 6$

15. Emanuel put 12 marbles on one pan of a scale. On the other pan, he put 4 marbles, then he added 8 more marbles to that side. Each of the marbles weighs 1 ounce. Is the scale balanced? Explain.

16. Bill and Rhonda have the same amount of money. Bill has $13. Rhonda has one $5 bill, three $1 bills, and one other bill. Is it a $1 bill or a $5 bill? Explain.

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LESSON 2-4

Practice B ★ MUST SHOW WORK!

Equations and Their Solutions

Determine whether the given value of the variable is a solution.

1. $9 + x = 21$ for $x = 11$ NO! $9+11 \stackrel{?}{=} 21 \Rightarrow 20 \neq 21$ X
2. $n - 12 = 5$ for $n = 17$ _____
3. $25 \cdot r = 75$ for $r = 3$ _____
4. $72 \div q = 8$ for $q = 9$ _____
5. $28 + c = 43$ for $c = 15$ _____
6. $u \div 11 = 10$ for $u = 111$ _____
7. $\frac{k}{8} = 4$ for $k = 24$ _____
8. $16x = 48$ for $x = 3$ _____
9. $73 - f = 29$ for $f = 54$ _____
10. $67 - j = 25$ for $j = 42$ _____
11. $39 \div v = 13$ for $v = 3$ _____
12. $88 + d = 100$ for $d = 2$ _____
13. $14p = 20$ for $p = 5$ _____
14. $6w = 30$ for $w = 5$ _____
15. $7 + x = 70$ for $x = 10$ _____
16. $6 \cdot n = 174$ for $n = 29$ _____

Replace each ? with a number that makes the equation correct.

17. $5 + 1 = 2 +$? ____
18. $10 -$? $= 12 - 7$ ____
19. ? $\cdot 3 = 2 \cdot 9$ ____
20. $28 \div 4 = 14 \div$? ____
21. ? $+ 8 = 6 + 3$ ____
22. $12 \cdot 0 =$? $\cdot 15$ ____
23. Carla had $15. After she bought lunch, she had $8 left. Write an equation using the variable x to model this situation. What does your variable represent?

    _____

    _____

24. Seventy-two people signed up for the soccer league. After the players were evenly divided into teams, there were 6 teams in the league. Write an equation to model this situation using the variable x.

    _____

    _____

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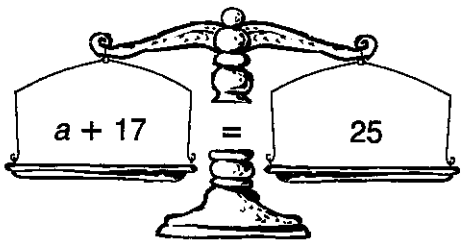
LESSON 2-4

Challenge

Keep It Balanced

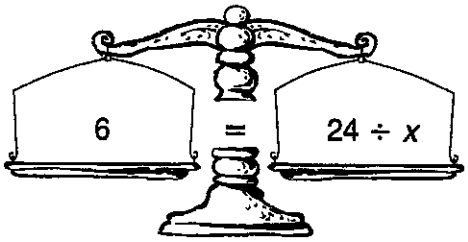
Study the scales below. Then circle the solution below each scale that will keep it balanced.

1.



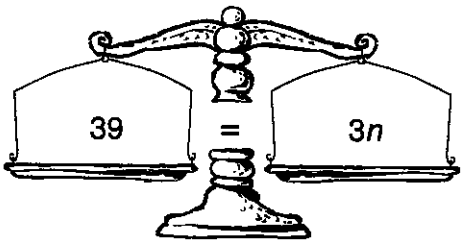
$a = 8$ $a = 9$

2.



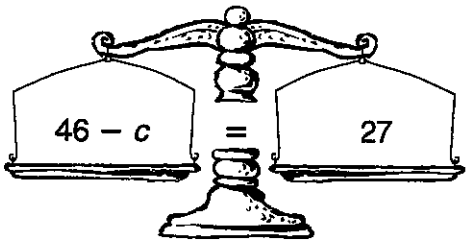
$x = 3$ $x = 4$

3.



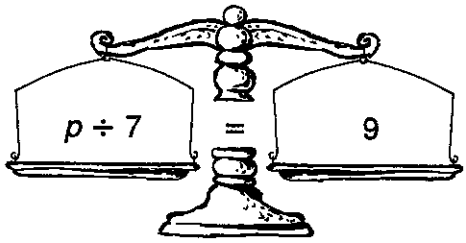
$n = 12$ $n = 13$

4.



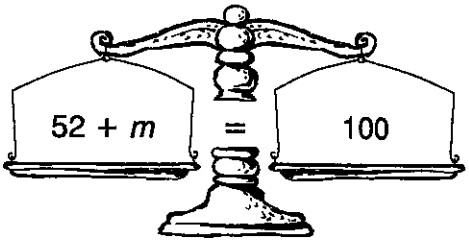
$c = 19$ $c = 29$

5.



$p = 49$ $p = 63$

6.



$m = 48$ $m = 58$

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LESSON 2-4

Problem Solving

Equations and Their Solutions

Use the table to write and solve an equation to answer each question. Then use your answers to complete the table.

1. A hippopotamus can stay underwater 3 times as long as a sea otter can. How long can a sea otter stay underwater?

_____

_____

2. A seal can stay underwater 10 minutes longer than a muskrat can. How long can a muskrat stay underwater?

_____

_____

3. A sperm whale can stay underwater 7 times longer than a sea cow can. How long can a sperm whale stay underwater?

_____

_____

How Many Minutes Can Mammals Stay Underwater?	
Hippopotamus	15
Human	
Muskrat	
Platypus	10
Polar bear	
Sea cow	16
Sea otter	
Seal	22
Sperm whale	

Circle the letter of the correct answer.

4. The difference between the time a platypus and a polar bear can stay underwater is 8 minutes. How long can a polar bear stay underwater?

A 1 minute

B 2 minutes

C 3 minutes

D 5 minutes

5. When you divide the amount of time any of the animals in the table can stay underwater by itself, the answer is always the amount of time the average human can stay underwater. How long can the average human stay underwater?

F 6 minutes

G 4 minutes

H 2 minutes

J 1 minute