

LESSON

3-10**Practice C****Decimal Equations**

Solve each equation. Check your answer.

1. $a - 0.089 = 12.5$

2. $b \div 2.8 = 4.7$

3. $w - 12.76 = 15.8$

4. $p \div 0.07 = 4.76$

5. $1.7806 + x = 2.009$

6. $b \div 6.5 = 9.7$

7. $8.3044 + s = 16.01$

8. $0.009q = 0.765$

9. $23.764 + x = 30.5$

10. $1.7n + 3.8 = 7.71$

11. $t - (8^2 + 0.36) = 0.5$

12. $9q + 0.2q = 27.6$

13. $8.4w - 0.67 = 15.29$

14. $1.4n + 4^3 = 85$

15. Andy bought 15 pounds of apples for \$0.69 a pound, and 7.2 pounds of grapes for \$3.65 a pound. He paid for the entire purchase with a \$50 bill. How much change did he get back? He wants to make 25 pounds of fruit salad for the party. How much more fruit does he need?

16. Brenda's garden is 6.5 feet long and 8.76 feet wide. She uses half of the garden for vegetables. Then she equally divides the rest of the garden between flowers and herbs. How large is her vegetable garden? How much land does she use for growing flowers?

LESSON 3-10 Exploration Recording Sheet

Solving Decimal Equations

For each equation, estimate the solution. Then use a calculator to solve the equation. Compare the calculated solution with your estimated solution.

	Estimate	Actual
1. $1.25 + x = 10$	$10 - 1 = 9$	$x = 8.75$
2. $20 - x = 1.95$	$20 - 2 = 18$	$x = 18.05$
3. $6x = 15$	$\frac{18}{6} = 3$	$x = 2.5$
4. $\frac{x}{4.5} = 10$	$4.5 \times 10 = 45$	$x = 45$
5. $\frac{x}{100} = 1.609$	$1.6 \times 100 = 160$	$x = 160.9$

6. Write a real-world situation for each equation in Exercises 1–5. **Check students' work.**

Think and Discuss

7. **Explain** which equation it was easiest to estimate a solution for and which equation it was most difficult to estimate a solution for.

Possible answer: 4 and 5 were easiest to estimate, because you could just move the decimal point. 1, 2, and 3 were most difficult.

8. **Discuss** whether the estimated or the calculated solutions are more reasonable for the real-world situations you wrote in Exercise 6.

Check students' work.

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LESSON 3-10 Practice A

Decimal Equations

Circle the letter of the correct answer.

- If $7.2 + x = 9.7$, what is the value of x ?
 A 16.9
 B 2.5
 C 2.9
 D 16.5
- If $n \div 4 = 0.4$, what is the value of n ?
 F 4.4
 G 0.1
 H 1.6
 J 10

Solve each equation. Check your answer.

- $a - 0.4 = 1.3$
 $a = 1.7; 1.7 - 0.4 = 1.3$
- $2n = 1.8$
 $n = 0.9; 2 \cdot 0.9 = 1.8$
- $0.8 + x = 1.3$
 $x = 0.5; 0.8 + 0.5 = 1.3$
- $p \div 4 = 0.7$
 $p = 2.8; 2.8 \div 4 = 0.7$
- $w - 2.3 = 1.2$
 $w = 3.5; 3.5 - 2.3 = 1.2$
- $0.5q = 0.25$
 $q = 0.5; 0.5 \cdot 0.5 = 0.25$
- $5.7 + s = 6.0$
 $s = 0.3; 5.7 + 0.3 = 6.0$
- $b \div 3 = 0.6$
 $b = 1.8; 1.8 \div 3 = 0.6$
- $t - 3.1 = 1.6$
 $t = 4.7; 4.7 - 3.1 = 1.6$
- $3y = 1.5$
 $y = 0.5; 3 \cdot 0.5 = 1.5$
- The length of a photograph is 2.1 inches, and the width is 3 inches. Solve the equation $a \div 2.1 = 3$ to find the area of the photograph.
 $a = 6.3$ square inches
- It costs \$0.90 to enlarge each photograph. If you want to enlarge 5 photos, how much will it cost in all?
\$4.50

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LESSON 3-10 Practice B

Decimal Equations

Solve each equation. Check your answer.

- $a - 2.7 = 4.8$
 $a = 7.5; 7.5 - 2.7 = 4.8$
- $b \div 7 = 1.9$
 $b = 13.3; 13.3 \div 7 = 1.9$
- $w - 6.5 = 3.8$
 $w = 10.3; 10.3 - 6.5 = 3.8$
- $p \div 0.4 = 1.7$
 $p = 0.68; 0.68 \div 0.4 = 1.7$
- $4.5 + x = 8$
 $x = 3.5; 4.5 + 3.5 = 8$
- $b \div 3 = 2.5$
 $b = 7.5; 7.5 \div 3 = 2.5$
- $7.8 + s = 15.2$
 $s = 7.4; 7.8 + 7.4 = 15.2$
- $1.63q = 9.78$
 $q = 6; 1.63 \cdot 6 = 9.78$
- $0.05 + x = 2.06$
 $x = 2.01; 0.05 + 2.01 = 2.06$
- $1.7n = 2.38$
 $n = 1.4; 1.7 \cdot 1.4 = 2.38$
- $t - 6.08 = 12.59$
 $t = 18.67; 18.67 - 6.08 = 12.59$
- $9q = 16.2$
 $q = 1.8; 9 \cdot 1.8 = 16.2$
- $w - 8.9 = 10.3$
 $w = 19.2; 19.2 - 8.9 = 10.3$
- $1.4n = 3.22$
 $n = 2.3; 1.4 \cdot 2.3 = 3.22$
- $t - 12.7 = 0.8$
 $t = 13.5; 13.5 - 12.7 = 0.8$
- $3.8 + a = 6.5$
 $a = 2.7; 3.8 + 2.7 = 6.5$
- The distance around a square photograph is 12.8 centimeters. What is the length of each side of the photograph?
3.2 centimeters
- You buy two rolls of film for \$3.75 each. You pay with a \$10 bill. How much change should you get back?
\$2.50

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LESSON 3-10 Practice C

Decimal Equations

Solve each equation. Check your answer.

- $a - 0.089 = 12.5$
 $a = 12.589; 12.589 - 0.089 = 12.5$
- $b \div 2.8 = 4.7$
 $b = 13.16; 13.16 \div 2.8 = 4.7$
- $w - 12.76 = 15.8$
 $w = 28.56; 28.56 - 12.76 = 15.8$
- $p \div 0.07 = 4.76$
 $p = 0.3332; 0.3332 \div 0.07 = 4.76$
- $1.7806 + x = 2.009$
 $x = 0.2284; 1.7806 + 0.2284 = 2.009$
- $b \div 6.5 = 9.7$
 $b = 63.05; 63.05 \div 6.5 = 9.7$
- $8.3044 + s = 16.01$
 $s = 7.7056; 8.3044 + 7.7056 = 16.01$
- $0.009q = 0.765$
 $q = 85; 0.009 \cdot 85 = 0.765$
- $23.764 + x = 30.5$
 $x = 6.736; 23.764 + 6.736 = 30.5$
- $1.7n + 3.8 = 7.71$
 $n = 2.3; 1.7 \cdot 2.3 + 3.8 = 7.71$
- $t - (8^2 + 0.36) = 0.5$
 $t = 64.86; 64.86 - 64.36 = 0.5$
- $9q + 0.2q = 27.6$
 $q = 3; 9 \cdot 3 + 0.2 \cdot 3 = 27.6$
- $8.4w - 0.67 = 15.29$
 $w = 1.9; (8.4 \cdot 1.9) - 0.67 = 15.29$
- $1.4n + 4^3 = 85$
 $n = 15; (1.4 \cdot 15) + 64 = 85$
- Andy bought 15 pounds of apples for \$0.69 a pound, and 7.2 pounds of grapes for \$3.65 a pound. He paid for the entire purchase with a \$50 bill. How much change did he get back? He wants to make 25 pounds of fruit salad for the party. How much more fruit does he need?
\$13.37; 2.8 pounds
- Brenda's garden is 6.5 feet long and 8.76 feet wide. She uses half of the garden for vegetables. Then she equally divides the rest of the garden between flowers and herbs. How large is her vegetable garden? How much land does she use for growing flowers?
**28.47 square feet;
14.235 square feet**

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