

**Topic
1****Cumulative Practice**

For use before Topic 1

Write the mixed number as a decimal.

1. $19\frac{1}{2} = \underline{\hspace{2cm}}$

2. $3\frac{1}{4} = \underline{\hspace{2cm}}$

**Topic
1****Vocabulary Practice**

For use before Topic 1

1. Write what you know about this phrase.

Review: Distributive Property**Topic
1****Prerequisite Skills Practice**

For use before Topic 1

Simplify the expression.

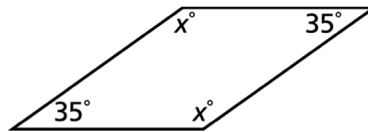
1. $17 + 2t - 9 + 2t$

2. $(y + 7) + (2y - 5)$

Topic**1****Extra Practice**

Solve the equation. Check your solution.

1. $8y - 7 = 9$
 2. $14 - 3m = -1$
 3. $30 + 2k + 5k = 100$
 4. $z + (z - 6) - 2 = -10$
 5. $3.2x - 1.7x + 5.5 = 10$
 6. $\frac{3}{4}x - \frac{1}{4}x + 14 = 3$
 7. $3(a - 2) = 36$
 8. $2(8 + p) = 22$
 9. $3(2x + 1) + x = -39$
 10. $m + 4(2m - 3) = -3$
11. A rope 25 feet long is cut into 3 pieces. The first piece is $2x$ feet long, the second piece is $5x$ feet long, and the third piece is 4 feet long.
- a. Write and solve an equation to find x .
 - b. Find the lengths of the first and second pieces.
12. The average of your 3 quiz grades is 17 points. Two of your quiz grades are 14 points and 19 points. Write and solve an equation to find the score of your third quiz.
13. The cost C (in dollars) of making n feet of cabinet is represented by $C = 18n + 45$. How many feet of cabinet are made when the cost is \$441?
14. At the movies, you order 3 boxes of popcorn and a bottle of water. The cost of a bottle of water is \$1.75. Your total cost is \$9.25. Write and solve an equation to find the cost of one box of popcorn.
15. You and your friend each purchase an equal number n of magazines. Your magazines cost \$1.50 each and your friend's magazines cost \$2 each. The total cost for you and your friend is \$10.50. Write and solve an equation to find the number of magazines you purchased.
16. The sum of the measures of the interior angles of the parallelogram is 360° . Write and solve an equation to find the value of each of the unknown angles.
17. You had \$26 in your pocket. You purchased x pens at \$3.50 each. You now have \$8.50 in your pocket. Write and solve an equation to find the number of pens purchased.



Topic**1****Reteach**

To solve a two-step equation, first write the equation. Use properties of equality to apply inverse operations and “undo” the operations in the equation. This will isolate the variable in the equation.

EXAMPLE Solving a Two-Step Equation

Solve $15x + 3 = 48$.

$$15x + 3 = 48 \quad \text{Write the equation.}$$

$$\underline{-3} \quad \underline{-3} \quad \text{Subtraction Property of Equality}$$

$$15x = 45 \quad \text{Simplify.}$$

$$\frac{15x}{5} = \frac{45}{15} \quad \text{Division Property of Equality}$$

$$x = 3 \quad \text{Simplify.}$$

► So, the solution is $x = 3$.

In a multi-step equation, combine any like terms before applying the properties of equality to isolate the variable.

EXAMPLE Solving a Multi-Step Equation

Solve $a + 2a - 4 = 14$.

$$a + 2a - 4 = 14 \quad \text{Write the equation.}$$

$$3a - 4 = 14 \quad \text{Combine like terms.}$$

$$\underline{+4} \quad \underline{+4} \quad \text{Addition Property of Equality}$$

$$3a = 18 \quad \text{Simplify.}$$

$$\frac{3a}{3} = \frac{18}{3} \quad \text{Division Property of Equality}$$

$$a = 6 \quad \text{Simplify.}$$

► So, the solution is $a = 6$.

Topic**1****Reteach (continued)**

Sometimes you have to use the Distributive Property to isolate the variable. After you use it, combine any like terms and use the properties of equality to finish isolating the variable.

EXAMPLE Using the Distributive Property to Solve an Equation

Solve $2(5x - 3) = 4$.

$$2(5x - 3) = 4 \quad \text{Write the equation.}$$

$$2(5x) - 2(3) = 4 \quad \text{Distributive Property}$$

$$10x - 6 = 4 \quad \text{Simplify.}$$

$$\begin{array}{r} + 6 \\ + 6 \end{array} \quad \text{Addition Property of Equality}$$

$$10x = 10 \quad \text{Simplify.}$$

$$\frac{10x}{10} = \frac{10}{10} \quad \text{Division Property of Equality}$$

$$x = 1 \quad \text{Simplify.}$$

► So, the solution is $x = 1$.

Solve the equation. Check your solution.

1. $4k - 20 = 60$

2. $\frac{3}{7}p + 12 = 6$

3. $\frac{2}{3}y + y - 4 = 31$

4. $36 = x - 5x - 12$

5. $4d + 2d - 3d = 27$

6. $-6 = g + g + 4$

7. $-3(2y + 7) = -18$

8. $28 = 2(4f + 2)$

9. $16 = 2(t - 1) - t$

10. $10 - 3(x - 4) = 4$

11. $3(n + 12) - n = 8$

12. $-3(w - 6) = 3$

Topic
1**Enrichment and Extension****Solving Equations**

Work with a partner to design a game board. Cut out each of the cards, fold them in half, and place them in a bag.

Game Rules:

Each player puts a game piece on the start square. The youngest student goes first, selects a card from the bag, and solves the equation on a separate piece of paper. If the answer is positive, the player moves forward that many spaces. If the answer is negative, the player moves backward that many spaces. If there are no spaces to move back, the player loses a turn. If a player suspects his competitor's answer is incorrect, he or she can challenge by solving the equation to check the solution. If a player challenges and wins, he or she moves forward 3 spaces. If a player challenges and loses, he or she forfeits a turn. Place the card back in the bag and it is the next person's turn. The first player to the end square wins.

$$2x - 12 = 8$$

$$\frac{1}{2}x = 3$$

$$2x + 6 = 0$$

$$-14x + 7 = -21$$

$$0.75x + 0.5 = 2$$

$$4x + 2 = 22$$

$$15x + 2 = 62$$

$$-30x = 90$$

$$3x = 21$$

$$x + 10 = 7$$

$$2x - 4 = 10$$

$$\pi x = 6\pi$$

$$4x - 10 = 6$$

$$\frac{3}{4}x - 0.25 = 0.5$$

$$13x - 2x - 3 = 41$$

$$25x - 20 = 5$$

$$-\frac{2}{5}x = -2$$

$$4x - 11x + 32 = 4$$



Puzzle Time

Where Was The Declaration Of Independence Signed?

Circle the letter of each correct answer in the boxes below. Then circled letters will spell out the answer to the riddle.

Solve the equation.

1. $8 - 3x = 17$
2. $5a - 6 - 2a = 12$
3. $4.3t - 2.1t - 2.3 = 7.6$
4. $8.1 + 3.8h - 5.6h = -7.2$
5. $\frac{2}{5}c + 4 - \frac{1}{5}c = -9$
6. $2(4s - 16) - 5s = -5$
7. $3g - 6(g - 8) = 42$
8. $1.3(8 - b) + 3.7b = -5.2$
9. For the past three months, Grace used her cell phone for 43 minutes, 62 minutes, and 57 minutes. How many minutes would she have to use her cell phone this month for the average usage over the four months to be 55 minutes?
10. A triangle has one angle measuring $3x$ degrees. A second angle measures $(2x + 20)$ degrees and the third angle measures $(4x - 20)$ degrees. What is the value of x ?
11. You and a friend buy two fruit smoothies and leave a tip. You split the total and your half comes to \$3.60. What percent tip (in decimal form) did you and your friend leave if the fruit smoothies cost \$3 each?

A	M	T	E	S	R	T	I	H	P	E	D	G	B	Y
2	60	6	8.2	0.10	5	9	0.18	8.5	55	-3	10.5	-2	0.15	-62
F	B	I	R	O	H	T	C	U	T	N	O	L	M	S
9.5	0.20	3	10	-65	15	58	90	8	20	-55	4.5	68	-6.5	12.5