

Equations with Simplifying B

Name: Key Color: _____ Date: _____*Directions: Simplify, solve, and check the following equations.*

1. $5x + 3x = 19 + 5$

$$\begin{array}{r} 8x = 24 \\ \hline \div 8 \quad \div 8 \\ \hline x = 3 \end{array}$$

Check: $5x + 3x = 19 + 5$
 $5(3) + 3(3) = 19 + 5$
 $15 + 9 = 19 + 5$
 $24 = 24 \checkmark$

2. $10x - 17x = 8 - 50$

$$\begin{array}{r} -7x = -42 \\ \hline \div -7 \quad \div -7 \\ \hline x = 6 \end{array}$$

Check: $10x - 17x = 8 - 50$
 $10(6) - 17(6) = 8 - 50$
 $60 - 102 = 8 - 50$
 $-42 = -42 \checkmark$

3. $4x + 7x - 4x = 56$

$$\begin{array}{r} 7x = 56 \\ \hline \div 7 \quad \div 7 \\ \hline x = 8 \end{array}$$

Check: $4x + 7x - 4x = 56$
 $4(8) + 7(8) - 4(8) = 56$
 $32 + 56 - 32 = 56$
 $56 = 56 \checkmark$

4. $10 + 4 = 2a + 5a$

$$\begin{array}{r} 14 = 7a \\ \hline \div 7 \quad \div 7 \\ \hline 2 = a \end{array}$$

Check: $10 + 4 = 2a + 5a$
 $10 + 4 = 2(2) + 5(2)$
 $10 + 4 = 4 + 10$
 $14 = 14 \checkmark$

5. $12 + 36 = 13y - 7y$

$$\begin{array}{r} 48 = 6y \\ \hline \div 6 \quad \div 6 \\ \hline 8 = y \end{array}$$

Check: $12 + 36 = 13y - 7y$
 $12 + 36 = 13(8) - 7(8)$
 $12 + 36 = 104 - 56$
 $48 = 48 \checkmark$

Equations with Simplifying B

6. $3(5x - 3x) + 5 = 47$

$$15x - 9x + 5 = 47$$

$$6x + 5 = 47$$

$$\begin{array}{r} -5 \quad -5 \\ \hline \end{array}$$

$$6x = 42$$

$$\begin{array}{r} \div 6 \quad \div 6 \\ \hline \end{array}$$

$$x = 7$$

Check: $3(5x - 3x) + 5 = 47$

$$3(5 \cdot 7 - 3 \cdot 7) + 5 = 47$$

$$3(35 - 21) + 5 = 47$$

$$3(14) + 5 = 47$$

$$42 + 5 = 47$$

$$47 = 47 \checkmark$$

7. $2(7x - 3x) + 4 = 28$

$$14x - 6x + 4 = 28$$

$$8x + 4 = 28$$

$$\begin{array}{r} -4 \quad -4 \\ \hline \end{array}$$

$$8x = 24$$

$$\begin{array}{r} \div 8 \quad \div 8 \\ \hline \end{array}$$

$$x = 3$$

Check: $2(7x - 3x) + 4 = 28$

$$2(7 \cdot 3 - 3 \cdot 3) + 4 = 28$$

$$2(21 - 9) + 4 = 28$$

$$2(12) + 4 = 28$$

$$24 + 4 = 28$$

$$28 = 28 \checkmark$$

8. $3(2x - 3) = 19$

$$6x - 9 = 19$$

$$\begin{array}{r} +9 \quad +9 \\ \hline \end{array}$$

$$6x = 28$$

$$\begin{array}{r} \div 6 \quad \div 6 \\ \hline \end{array}$$

$$x = 4\frac{2}{3}$$

Check: $3(2x - 3) = 19$

$$3(2 \cdot 4\frac{2}{3} - 3) = 19$$

$$3(9\frac{1}{3} - 3) = 19$$

$$3(6\frac{1}{3}) = 19$$

$$19 = 19 \checkmark$$

9. $-7(x + 5) = 7$

$$-7x + 35 = 7$$

$$\begin{array}{r} +35 \quad +35 \\ \hline \end{array}$$

$$-7x = 42$$

$$\begin{array}{r} \div -7 \quad \div -7 \\ \hline \end{array}$$

$$x = -6$$

Check: $-7(x + 5) = 7$

$$-7(-6 + 5) = 7$$

$$-7(-1) = 7$$

$$7 = 7 \checkmark$$

10. $6(1 - 2x) = 25 + 17$

$$6 - 12x = 25 + 17$$

$$\begin{array}{r} -6 \quad -6 \\ \hline \end{array}$$

$$-12x = 36$$

$$\begin{array}{r} \div -12 \quad \div -12 \\ \hline \end{array}$$

$$x = -3$$

Check: $6(1 - 2x) = 25 + 17$

$$6(1 - 2 \cdot -3) = 25 + 17$$

$$6(1 - -6) = 25 + 17$$

$$6(7) = 42$$

$$42 = 42 \checkmark$$