

Algebra Workshop

Name: _____

Homework 1

1. Evaluate the following expressions:

(a) $(-2)(-3) - 5 \cdot 2$

(b) $3(5 - 7) - 3^2 + 6$

(c) $(5 - 3)^3(4 - 7)$

(d) $3 - \frac{10}{4 + 1} + (3)(-2)$

2. For each of the following sentences, write an algebraic expression that describes the situation. **Note:** These are not equations, so there will not be an equal sign.

(a) Suppose I choose a number. I multiply this number by 5; then I subtract 3.

(b) Suppose I choose a number. I subtract 4 from the number; then I divide by 5.

3. For each of the following expressions, write a sentence describing what the expression means (similar to the descriptions in problem 1 on the previous page).

(a) $5x - 7$

(b) $3(x + 1)$

(c) $\frac{x + 4}{7}$

(d) $\frac{2x + 3}{4}$

4. Solve the following equations:

(a) $5x - 3 = 7$

(b) $9 = 3(x - 5)$

(c) $7 = 3x + 1$

(d) $\frac{3x}{2} = 9$

(e) $\frac{x}{8} + 3 = 5$

(f) $\frac{3 + 2x}{5} - 1 = 4$

(g) $1.2x - 2 = 4$

(h) $0.85x = 17$

5. Solve the following equations:

(a) $11 - x = 7$

(b) $x + 3x = 8$

(c) $5x = 3x + 1$

(d) $x = 5x + 4$

(e) $3.5x = 1.1x + 6$

(f) $0.25x + x = 10$

(g) $5(x - 3) + 3x = 17$

(h) $3(x - 2) = x$

6. Solve the following equations:

(a) $3(x + 1) + 4(x - 2) = 9$

(b) $2(3x + 1) - 3(x + 1) = 11$

(c) $3(7 - x) - 4(2x - 5) = -3$

7. Simplify the following expressions:

(a) $3(2x - 4) - 4(3x + 4)$

(b) $5(2x + y) + 2(2x - 4y)$

8. Solve for y in the following equations:

(a) $3(x + 2) - y = 4x$

(b) $3x - 4(y + 2) = 6y - 9$

9. Karen has a bowl containing M&M's. She gives 20 of the M&M's to a friend. Then, she eats half of the M&M's. If there are now 15 M&M's in the bowl, how many M&M's were in the bowl to begin with?

(a) Write an equation that describes this situation.

(b) Solve the equation.

10. Jimmy won 40 toy cars. Then, he gave 2 toy cars to each of his friends. If he now has 8 toy cars, how many friends does he have?

(a) Write an equation that describes this situation.

(b) Solve the equation.