

## 1.1 Expressions and Formulas

Evaluate the following given  $a = \frac{3}{4}$ ,  $b = -8$ ,  $c = -2$ ,  $d = 3$ , and  $g = \frac{1}{3}$ .

1. $ab^2 - d$	2. $\frac{ab}{c} + d^2$
3. $\frac{d b-c }{ab}$	4. $9bc - \frac{1}{g}$

## 1.2 Properties of Real Numbers

**Simplify.**

1. $3(r - 10t) - 4(7t + 2r)$	2. $\frac{1}{5}(10a - 15b) - \frac{1}{2}(8b + 4a)$
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**Name the property illustrated by each expression.**

3. $2(r + w) = 2r + 2w$
4. $r + (x + y) = (r + x) + y$
5. If $2a = c$ , then $c = 2a$ .
6. $3 \cdot x = x \cdot 3$
7. If $2x = 4$ and $4 = 3y$ , then $2x = 3y$ .

### 1.3 Solving Equations

Solve for x.

1.  $\frac{5}{6}x + \frac{3}{4} = \frac{11}{12}$

2.  $5(6 - 4a) = a + 21$

Solve for the indicated variable.

3.  $c = \frac{d+1}{3}$ , solve for d.

4.  $E = Iw^2 + U$ , solve for I.

### 1.4 Solving Absolute Value Equations & Inequalities

Solve for x and write solution in set notation.

1.  $7|x+3| = 42$

2.  $5 - 3|2+2x| = -7$

3.  $|2x-11| > 9$

4.  $|5x+2| - 3 \leq 25$

### 1.5 Solving Inequalities

Solve and graph the solution on a number line. Then write the solution in interval notation.

1. $-3(4x - 1) > 18$	2. $-10 < 3x + 2 \leq 14$	3. $\frac{2}{3}x - 2 > 10$ or $\frac{3}{4}x + 5 \leq -4$
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### Word Problems

1. Find the dimensions for a rectangle if the width is 3 less than 2 times the length and the perimeter is 36 inches.
2. To legal drive in Illinois on an interstate you must drive between 45 mph and 65 mph, inclusive. Write an inequality to represent the legal speed limit in Illinois.

Identify the set(s) of number to which each number belongs.

3. $\sqrt{5}$	4. $\frac{-25}{5}$	5. $\frac{4}{3}$
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