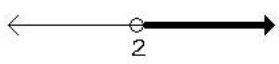



Section 2.8: Solving Linear Inequalities:

1. Fill in the following table.

| Inequality Notation | Interval Notation | Graph |
|---------------------|-------------------|------------------------------------------------------------------------------------|
| $r \leq -11$ | | |
| | $(-3, \infty)$ | |
| | |  |
| | |  |
| | $(-1, 7)$ | |
| $3 \leq x \leq 6$ | | |
| | $[-2, 3)$ | |
| $0 < x \leq 5$ | | |

Solve the inequalities, write the solution in both inequality and interval forms, and graph the solution:

2. $2(x - 5) + 3x < -4(x - 6) + 1$

3. $\frac{7}{2}(y - 4) \leq \frac{4}{5}(y + 5)$

4. $-6 < 3 - \frac{1}{3}a \leq 5$

Solve the following story problems algebraically, and define any variables you use.

5. Mabimi Pampo has scores of 96 and 86 on his first two geometry tests. What possible scores can he make on his third test so that his average is at least 90?

6. The formula for converting Celsius temperature to Fahrenheit is $F = \frac{9}{5}C + 32$. The Fahrenheit temperature of Key West, Florida, has never exceeded 95° . How would you describe this using Celsius temperature?

Section 9.1: Set Operations and Compound Inequalities

1. Let $A = \{1, 2, 3, 4, 5, 6\}$, $B = \{1, 6\}$, and $C = \{2, 3, 4\}$. Find the following sets:

- (a) $B \cap C$
- (b) $B \cup C$
- (c) $A \cap B$
- (d) $A \cup B$

2. Express each of the following sets in the simplest form, using both inequality notation and interval notation.

- (a) $(-\infty, 4] \cap [4, \infty)$
- (b) $x < 4$ and $x > 4$
- (c) $x < 5$ or $x < -3$
- (d) $[-1, 2] \cap (0, 5)$
- (e) $[-1, 2] \cup (0, 5)$

3. Solve the following inequalities and write your answer in both inequality notation and interval notation:

- (a) $7x + 6 \leq 48$ and $-4x \leq -20$
- (b) $3x < x + 12$ or $x + 1 > 10$

Section 9.2: Absolute Value Equations and Inequalities

1. Solve the following equations and inequalities. In each case, express the solution in both inequality notation and interval notation.

- (a) $|x + 5| - 2 = 12$
- (b) $|r - 2| - 3 \leq 4$
- (c) $|4 - x| \geq 1$
- (d) $|3x - 1| > -2$
- (e) $|4 + 7x| = 0$
- (f) $|4x - 1| \leq 0$
- (g) $|6r - 2| \geq 0$
- (h) $|6x - 1| \leq -3$