# Solving One-Step Inequalities

LEVEL 1: The Basics

Q1: Solve each inequality. Write your answer and graph the solution on a number line.

- $3x > 12$
- $x - 3 \geq 1$
- $x + 7 \leq 14$
- $x + 5 < 12$
- $3x > -9$
- $x - 1 < 4$
- $x - 4 \leq 10$
- $x - 5 < 0$
- $x + 6 > 13$
- $x - 2 \geq 6$
- $x + 4 \leq 11$
- $x - 7 \geq -1$
- $x + 8 > 15$
- $x - 6 \geq 3$
- $5x \leq 60$
- $14x < 42$
- $x + 1 > 8$
- $\frac{b}{5} \leq 6$
- $x + 6 \leq 13$
- $2x < 50$
- $8x > 24$

---

Q2: Write and solve the inequality

1. A number plus 4 is less than 10.
2. A number divided by 3 is at least 5.

Salah Alkmali

# Solving One-Step Inequalities

LEVEL 2: Dive Deeper

Q1: Solve each inequality. Some involve negative numbers or fractions

- $3x > -2$
- $x - 2 \leq -5$
- $x - 1 > -8$
- $x + 4 < 0$
- $5x \geq -22$
- $x + 2 < -5$
- $x - 5 \leq -1$
- $x - 4 > -7$
- $x + 4 \geq -2$
- $\frac{x}{2} \geq -6$
- $x + 3 < -1$
- $x - 3 \leq -6$
- $x - 7 > -10$
- $x - 6 \leq -2$
- $\frac{x}{5} > -9$
- $\frac{x}{-3} < -3$
- $-5x \geq -40$
- $x - 6 \leq -3$

---

Q2: Write and solve the inequality

a) Subtracting 2 from a number gives no more than 7.

b) A number divided by $-2$ is greater than $-4$.

Salah Alkmali

# Solving One-Step Inequalities

LEVEL 3: Mastering the Concept

Q1: Solve each inequality. Graph the solution on a number line.

- $x + \frac{1}{2} > \frac{3}{2}$
- $\frac{x}{-1.2} \leq 10$
- $y - 1.5 \leq 4.5$
- $2(x + 3) > 14$
- $\left(\frac{1}{3}\right) a \geq 5$
- $-0.2q > 1$
- $0.2b < -4$
- $-\frac{x}{9} < 2$
- $-\left(\frac{3}{4}\right) c > 9$
- $2x - 3x \leq 6$

Salah Alkmali

# Solving One-Step Inequalities

## Extra worksheet:

1) What's the difference between:

   $x < -3$ and $x \leq -3$?

2) Which of these numbers are in the solution set of $x < 2$?

   $\{-1, 0, 2, 3\}$

3) A number times $-2$ is greater than $-10$.

   What's the number range?

4) Error Analysis: A student solved the inequality -4x > 20 and got x > -5. Identify the mistake(s) the student made and provide the correct solution.

Salah Alkmali