A.A.24: Solving Inequalities: Solve linear inequalities in one variable

1 The inequality $\frac{1}{2}x + 3 < 2x - 6$ is equivalent to

1) $x < -\frac{5}{6}$ 3) $x < 6$

2) $x > -\frac{5}{6}$ 4) $x > 6$

2 What is the solution of the inequality $-6x - 17 \geq 8x + 25$?
1) $x \geq 3$ 3) $x \geq -3$
2) $x \leq 3$ 4) $x \leq -3$

3 What is the solution of $3(2m - 1) \leq 4m + 7$?
1) $m \leq 5$ 3) $m \leq 4$
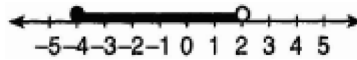2) $m \geq 5$ 4) $m \geq 4$

4 Which inequality is shown on the accompanying graph?

1) $x < -1$ 3) $x > -1$
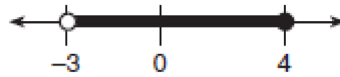2) $x \leq -1$ 4) $x \geq -1$

5 Which inequality is represented in the graph below?

1) $-4 < x < 2$ 3) $-4 < x \leq 2$
2) $-4 \leq x < 2$ 4) $-4 \leq x \leq 2$

6   Which inequality is represented in the accompanying graph?

1) $-3 \leq x < 4$ 3) $-3 < x < 4$
2) $-3 \leq x \leq 4$ 4) $-3 < x \leq 4$

7   Which graph best represents the solution set for the inequality $x > \sqrt{2}$?

8   In order to be admitted for a certain ride at an amusement park, a child must be greater than or equal to 36 inches
    tall and less than 48 inches tall. Which graph represents these conditions?

9   Which graph represents the solution set for $2x - 4 \leq 8$ and $x + 5 \geq 7$?

10   The manufacturer of Ron's car recommends that the tire pressure be at least 26 pounds per square inch and less
    than 35 pounds per square inch. On the accompanying number line, graph the inequality that represents the
    recommended tire pressure.

2
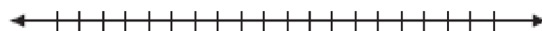
A.A.24: Solving Inequalities: Solve linear inequalities in one variable
Answer Section

1 ANS: 4

$$\frac{1}{2}x + 3 < 2x - 6$$

$$9 < \frac{3x}{2}$$

$$6 < x$$

REF: 010425a

2 ANS: 4

$$-6x - 17 \geq 8x + 25$$

$$-42 \geq 14x$$

$$-3 \geq x$$

REF: 081121ia

3 ANS: 1

$$3(2m - 1) \leq 4m + 7$$

$$6m - 3 \leq 4m + 7$$

$$2m \leq 10$$

$$m \leq 5$$

REF: 081002ia

4 ANS: 4

$$10 \times 8 + \frac{1}{2}\pi \times 4^2 = 80 + 8\pi$$

REF: 080815a

5 ANS: 2   REF: 060001a

6 ANS: 4   REF: 080411a

7 ANS: 2   REF: 060616a

8 ANS: 1   REF: 010610a

9 ANS: 2

$$2x - 4 \leq 8$$

$$2x \leq 12.$$

$$x \leq 6$$

$$x + 5 \geq 7$$

$$x \geq 2$$

REF: 010312a

10 ANS:

REF: 060532a