EXTRA PRACTICE — Exercises

Unit VIII – Quadratic Equations
Part A – Solving Quadratic Equations of the form $ax^2+bx+c=0$
Lesson 5 – Quadratic Inequalities

Solve each of the following quadratic inequalities by finding the critical points and determining which intervals satisfy the inequality. Show your solution, first by a graph on a number line, then using set notation.

1. $2y^2 = 9y$

2. $0 < -a^2 + 4a - 3$

3. $0 \geq 35 - 2y - y^2$

4. $y^3 - y^2 - 12y < 0$

5. $4a^2 > 9a + 9$

6. $3a^3 + 5a^2 - 28a \leq 0$

EXTRA PRACTICE — Answer Key

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Solve each of the following quadratic inequalities by finding the critical points and determining which intervals satisfy the inequality. Show your solution, first by a graph on a number line, then using set notation.

1. $S = \left\{ y \mid y \le 0 \text{ or } y \ge 4\frac{1}{2} \right\}$

2. $S = \left\{ a \mid 1 < a < 3 \right\}$

3. $S = \left\{ y \mid y \le -7 \text{ or } y \ge 2 \right\}$

4. $S = \left\{ y \mid y < -3 \text{ or } 0 < y < 4 \right\}$

5. $S = \left\{ a \mid a < -\frac{3}{4} \text{ or } a > 3 \right\}$

6. $S = \left\{ a \mid a \le -4 \text{ or } 0 \le a \le \frac{7}{3} \right\}$