

Name \_\_\_\_\_

Alg2a Q2 Test 2 Review

Due: Friday, January 10

Solving Quadratics

Test: Monday, January 13

***Part I: Reduce each radical:***

1)  $\sqrt{512}$

2)  $\sqrt{252}$

3)  $\sqrt{529}$

4)  $\sqrt{108}$

5)  $\sqrt{720}$

6)  $\sqrt{722}$

7)  $\sqrt{605}$

8)  $\sqrt{112}$

9)  $\sqrt{625}$

10)  $\sqrt{432}$

11)  $\sqrt{245}$

12)  $\sqrt{320}$

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## *Part II:*

### *Solve by Factoring:*

1)  $x^2 = 22x - 96$

2)  $5x^2 - 3x - 15 = 6x^2 + 10x + 15$

3)  $8x^2 - 6x + 72 = 9x^2 - 6x - 72$

4)  $5x = x^2 - 84$

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5)  $6x^2 = 30x + 396$

6)  $x^3 + 39x = 16x^2$

7)  $20x^2 - 45 = 0$

8)  $3x^2 = -3x + 216$

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9)  $5x^3 - 210x = 5x^2$

10)  $5x^2 + 35x = 40$

11)  $21x^2 + 3x - 10 = 5x^2 + 3x - 9$

12)  $x^2 = -22x - 72$

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13)  $11x^2 - 4x - 15 = 7x^2 - 4x - 14$

14)  $4x^2 - 17x + 3 = 6x^2 - 9x + 3$

15)  $8x^2 + 2x - 11 = 5x^2 + 11x - 11$

16)  $3x^2 - 6x + 8 = 12x^2 + 21x + 8$

**Answer Key:**

1)  $x = \{6, 16\}$

2)  $x = \{-10, -3\}$

3)  $x = \{-12, 12\}$

4)  $x = \{-7, 12\}$

5)  $x = \{-6, 11\}$

6)  $x = \{0, 3, 13\}$

7)  $x = \{-\frac{3}{2}, \frac{3}{2}\}$

8)  $x = \{-9, 8\}$

9)  $x = \{-6, 0, 7\}$

10)  $x = \{-8, 1\}$

11)  $x = \{-\frac{1}{4}, \frac{1}{4}\}$

12)  $x = \{-18, -4\}$

13)  $x = \{-\frac{1}{2}, \frac{1}{2}\}$

14)  $x = \{-4, 0\}$

15)  $x = \{0, 3\}$

16)  $x = \{-3, 0\}$

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**Solve Using The Quadratic Formula:**

1)  $3x^2 - 10x - 1 = 0$

2)  $9x^2 = 5x + 4$

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3)  $5x^2 = 17x - 6$

4)  $12x^2 + 22x = -4$

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5)  $4x^2 - 7 = -16x$

6)  $8x^2 = -1 - 12x$



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7)  $x^2 - 10x - 25 = 0$

8)  $7x^2 = 13x - 16$

**Answer Key:**

1)  $x = \frac{5}{3} \pm \frac{2\sqrt{7}}{3}$

2)  $x = \left\{ -\frac{4}{9}, 1 \right\}$

3)  $x = \left\{ \frac{2}{5}, 3 \right\}$

4)  $x = \frac{-11}{12} \pm \frac{\sqrt{73}}{12}$

5)  $x = -2 \pm \frac{\sqrt{23}}{4}$

6)  $x = \frac{-3}{4} \pm \frac{\sqrt{7}}{4}$

7)  $x = 5 \pm 5\sqrt{2}$

8)  $x$  No Real Solution ( $\sqrt{-279}$ )

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**Solve Using Completing the Square:**

1)  $x^2 + 6x - 39 = 0$

2)  $x^2 - 20x + 16 = 0$

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3)  $x^2 - 24x - 31 = 0$

4)  $x^2 + 8x - 176 = 0$

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5)  $x^2 - 18x + 1 = 0$

6)  $x^2 + 16x - 8 = 0$

**Answer Key:**

1)  $x = -3 \pm 4\sqrt{3}$

2)  $x = 10 \pm 2\sqrt{21}$

3)  $x = 12 \pm 5\sqrt{7}$

4)  $x = -4 \pm 8\sqrt{3}$

5)  $x = 9 \pm 4\sqrt{5}$

6)  $x = -8 \pm 6\sqrt{2}$