

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## Algebra I

Directions: Complete the following questions making sure to show all work.

1. If  $12\sqrt{12} = h\sqrt{k}$ , where  $h$  &  $k$  are positive integers and  $h > k$ , which of the following could be the value of  $h + k$ ?

- a. 12
- b. 24
- c. 27
- d. 51

2. If  $x^2 = y^4$  what is  $x$  in terms of  $y$ ?

- a.  $\sqrt{y}$
- b.  $y$
- c.  $y^2$
- d.  $y^3$

3. Simplify the radical  $\sqrt{3283}$

- a.  $67\sqrt{49}$
- b.  $7\sqrt{67}$
- c.  $7\sqrt{63}$
- d. 56

4.  $x^2 = 36$

Quantity A =  $x$

Quantity B = 6

Possible Answers:

- a. Quantity A is greater
- b. The relationship cannot be determined from the information given
- c. The two quantities are equal
- d. Quantity B is greater

5. Simplify the expression.  $\sqrt{5}(2\sqrt{3} + \sqrt{12})$

- a.  $10\sqrt{5}$
- b.  $4\sqrt{15}$
- c.  $4\sqrt{30}$
- d.  $3\sqrt{2}$

6. Which is an extraneous solution to this equation?

$$\frac{-2}{x+5} = x + 2$$

- a. -3
- b. -4
- c. -5
- d. 5

7. How many integers from 20 to 80, inclusive, are NOT the perfect squares of another integer?
- a. 58
  - b. 59
  - c. 56
  - d. 57

8. If the following are true, solve for  $x$ .

$$a = 3\sqrt{2}$$
$$3a = \sqrt{6x}$$

- a. 13
- b. 31
- c. 27
- d. 24

9. Which of the following expressions has the same value as  $\sqrt{0.25} \times \sqrt{2}$  ?

- a.  $\frac{\sqrt{2}}{4}$
- b.  $\frac{1}{2}$
- c. 1
- d.  $\frac{\sqrt{2}}{2}$

10. Which of the following expressions is equivalent to  $\sqrt{16x^9y^6}$

- a.  $4x^2y^3$
- b.  $4x^3y^2$
- c.  $4xy\sqrt{xy}$
- d.  $4x^4y^3\sqrt{x}$