

Quiz 3

10 September 2009

Show all work to support your solution. Be sure to check your solutions.

1. (3 Points) Simplify the following radical expression, assuming the variables are real numbers.

$$\begin{aligned}\sqrt{128c^2d^4} \\ = \sqrt{2^7c^2d^4} = 2^3|c|^1|d|^2\sqrt{2^1} = 8|c|d^2\sqrt{2}\end{aligned}$$

2. Solve the following two equations.

- (a) (3 Points)

$$3(y + 4) = 8y$$

$$3y + 12 = 8y$$

$$12 = 5y$$

$$y = \frac{12}{5}$$

$$3\left(\frac{12}{5} + 4\right) = 3\left(\frac{12}{5} + \frac{20}{5}\right) = 3\left(\frac{32}{5}\right) = \frac{96}{5}$$

$$8\left(\frac{12}{5}\right) = \frac{96}{5}$$

- (b) (4 Points)

$$x^2 + 100 = 20x$$

$$x^2 - 20x + 100 = 0$$

$$(x - 10)^2 = 0$$

$$x - 10 = 0$$

$$x = 10$$

$$(10)^2 + 100 = 100 + 100 = 200$$

$$20(10) = 200$$