

Solution College Algebra Quiz 2a

Name _____ Score _____ /10

Please Print Clearly

Fill in the blanks to correctly complete the following statements.

1. A quadratic equation in one variable is an equation which may be written in the form **$ax^2 + bx + c = 0$** where **a, b, and c are real numbers** and **$a \neq 0$** .

2. A quadratic equation in two variables is an equation which may be written in the form **$ax^2 + bx + c = y$** where **a, b, and c are real numbers** and **$a \neq 0$** .

3. **Zero Factor Property:** If a and b are real numbers and $ab = 0$, then **$a = 0$ or $b = 0$** .

4. **Quadratic Formula:** The solutions of a quadratic equation $ax^2 + bx + c = 0$ are given by

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

5. The **x-intercepts** of a graph are found by setting $y = 0$ and solving for x.

6. A linear equation in one variable is an equation that can be written in the form **$ax + b = 0$** where a and b are real numbers with a not zero

7. **Properties of Equations:**

If the same expression is added to (or subtracted from) both sides of an equation the resulting equation will be **equivalent** to the original equation.

8. Two equations are equivalent if they have the same **solution** set.

9. The graph of an equation consists of all the points, and only those points, which are **solutions** of the equation

10. Write an equation which is equivalent to the equation $\frac{2}{3}x + \frac{\sqrt{2}}{5}y = 22$. The coefficient of x in the new equation must have a denominator of 6. Show your work and explain your steps.

Solution: **Multiply both sides of $\frac{2}{3}x + \frac{\sqrt{2}}{5}y = 22$ by $\frac{1}{2}$ to obtain the equation**

$$\frac{2}{6}x + \frac{\sqrt{2}}{10}y = 11.$$

This equation is equivalent to the original and the denominator of the coefficient of x is 6.