



- \*10 questions
- \* Take your time – use the lessons and your notes if need them
- \* Check your answers by using the online quiz feature – input your selections for each question

Concept of Quadratic Equations

1. True or False: There are quadratic equations where the highest variable power is more than 2?
  - a. True
  - b. False
  
2. What is the shape of the graph of a quadratic equation called?
  - a. U
  - b. Linear function
  - c. Eclipse
  - d. Parabola
  
3. Write the following quadratic equation in standard form  $3x - 5 = -2x^2$ 
  - a.  $-2x^2 + 3x + 5$
  - b.  $2x^2 + 3x - 5$
  - c.  $5 + 3x + 2x^2$
  - d. *none of the above*

4. Calculate the discriminant and determine the type of roots for the following quadratic equation

$$3x^2 - 5x + 10 = 0$$

- a.  $-125$  2 real roots
  - b.  $-95$  double roots
  - c.  $-95$  complex roots – no real solutions
  - d.  $\sqrt{-95}$  2 real roots
5. Find the vertex of the quadratic function and determine if the graph open up or down

$$y = 2x^2 + 8x + 6$$

- a.  $(-2, -2)$  up
- b.  $(\frac{1}{2}, \frac{5}{3})$  down
- c.  $(-2, 8)$  down
- d.  $(4, 10)$  up

### Solving Quadratic Equations

Directions: solve the following quadratic equations by any method

6.  $2x^2 - x = 3$

- a.  $x = \sqrt{3}$  and  $-\sqrt{3}$
- b.  $x = \pm 1$
- c.  $x = 4$  and  $-3$
- d.  $x = -1$  and  $\frac{3}{2}$

7.  $2x^2 - 3x = x^2 + 18$

- a.  $x = 3$  and  $2$
- b.  $x = 0$  and  $5$
- c.  $x = -3$  and  $6$
- d.  $x = -3$  and  $0$

8.  $3x^2 - 7x = 0$

- a.  $x = -4$  and  $9$
- b.  $x = 0$  and  $\frac{7}{3}$
- c.  $x = 13$  and  $5$
- d.  $x = 4$  and  $-\frac{3}{7}$

9.  $(2x + 1)^2 - 7 = 0$

- a.  $x = -2$  and  $3$
- b.  $x = 1$  and  $5$
- c.  $x = 2 + \sqrt{3}$  and  $-2 + \sqrt{7}$
- d.  $x = -\frac{1+\sqrt{7}}{2}$  and  $\frac{1+\sqrt{7}}{2}$

10.  $x^2 - 4x = 16$

- a.  $x = 2 + 2\sqrt{5}$  and  $2 - 2\sqrt{5}$
- b.  $x = \frac{-3 \pm \sqrt{13}}{2}$
- c.  $x = \frac{3 \pm \sqrt{5}}{2}$
- d.  $x = \sqrt{13}$