Name ANSWER KEY (Alg. I) Per. _____ Date _____

SOLVING QUADRATIC EQUATIONS QUIZ REVIEW

ZERO PRODUCT PROPERTY

*Use the **Zero Product Property** to solve each quadratic equation for x. **Show all work.***

1. $3x(x-2)=0$

$\frac{3x}{3}=\frac{0}{3}$ $\quad x-2=0$

$x=0$ $\quad +2\ +2$

$x=2$

2. $(x+4)(5+x)=0$

$x+4=0$ $\quad 5+x=0$

$-4\ -4$ $\quad -5\ -5$

$x=-4$ $\quad x=-5$

3. $(2x-6)(3x+9)=0$

$2x-6=0$ $\quad 3x+9=0$

$+6\ +6$ $\quad -9\ -9$

$\frac{2x}{2}=\frac{6}{2}$ $\quad \frac{3x}{3}=\frac{-9}{3}$

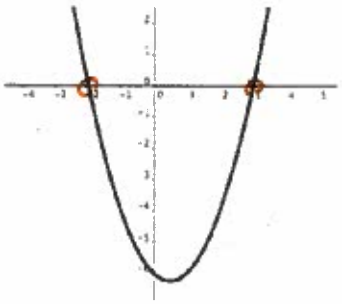
$x=3$ $\quad x=-3$

GRAPHING

*For each graph, state the **number of solutions** the quadratic function represented has. Then, **list the solutions**, if there are any.*

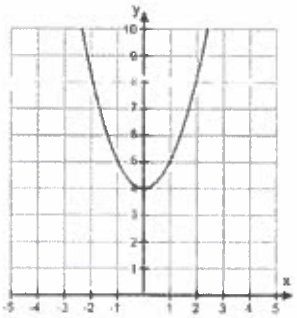
4. # of solutions 2

$x=-2, 3$



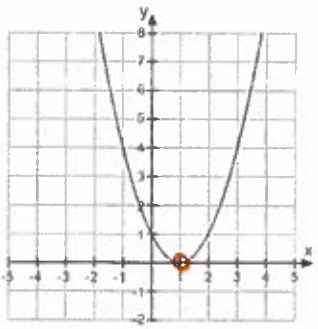
5. # of solutions 0

$x=$ —



6. # of solutions 1

$x=1$



QUADRATIC FORMULA

*Calculate the **discriminant** for each quadratic equation, showing all work. Then, state the **number of real solutions** the equation has.* b^2-4ac

7. $x^2-3x+4=0$

$a=1, b=-3, c=4$

$(-3)^2-4(1)(4)=9-16$

$=-7$ — no real roots

8. $8x^2+2x+5=0$

$a=8, b=2, c=5$

$(2)^2-4(8)(5)=4-160$

$=-156$ — no real roots

9. $-4x^2+12x-9=0$

$a=-4, b=12, c=-9$

$(12)^2-4(-4)(-9)=144-144$

$=0$ — 1 real root

*Solve each quadratic equation for x using the **quadratic formula**. **Show all work.***

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

10. $x^2-10x+16=0$

$a=1, b=-10, c=16$

$$\frac{-(-10)\pm\sqrt{(-10)^2-4(1)(16)}}{2(1)}=\frac{10\pm\sqrt{36}}{2}$$

$$=\frac{10\pm6}{2}\quad \frac{10+6}{2}=\frac{16}{2}=8 \qquad \frac{10-6}{2}=\frac{4}{2}=2$$

11. $x^2-3x=10 \rightarrow x^2-3x-10=0$

$a=1, b=-3, c=-10$

$$x=\frac{-(-3)\pm\sqrt{(-3)^2-4(1)(-10)}}{2(1)}=\frac{3\pm\sqrt{49}}{2}$$

$$x=\frac{3\pm7}{2}\quad \frac{3+7}{2}=\frac{10}{2}=5 \qquad \frac{3-7}{2}=\frac{-4}{2}=-2$$