STATION #1 – QUADRATIC FUNCTIONS & TRANSFORMATIONS

Describe how the following functions were translated from the function $f\left(x\right)= x^{2}$

1. $f\left(x\right)=(x+4)^{2}-4$ 2. $y=10-2(x-2)^{2}$

Identify the axis of symmetry, the min or max, and the domain and range of each function.

3. $f\left(x\right)= x^{2}-4$ 4. $y=(2x-1)^{2}$

Write in Standard form:

5. y = 3(x + 1)2 - 5

STATION #2 – STANDARD FORM

Identify the vertex, axis of symmetry, min or max, and domain and range of the following functions.

1. $y=x^{2}+6x+9$ 2. $y=-x^{2}-3x+6$

3. $f\left(x\right)=2x^{2}-4x+6$ Find the vertex and y-intercept.

4. What is the x value of the vertex in the equation? $ y=-5x^{2}+\frac{4}{7}$

STATION #3 – FACTORING

Factor the following polynomials completely.

1. $x^{2}+7x+10$

2. $-x^{2}+11x-18$

3. $16x^{2}-80x+100$

4. $9x^{2}-36$

5. $x^{3}+8$

STATION #4 – SOLVING QUADRATIC EQUATIONS

Solve the following quadratic equations by factoring.

1. $x^{2}+6x+8=0$ 2. $2x^{2}=8x$

3. $2x^{2}+6x=-4$

Solve the following quadratic equations using your graphing calculator. Round to two decimal places.

4. $3x^{2}-5x=4$

5. $x^{2}=4x+8$

STATION #5 – COMPLETEING THE SQUARE

Solve each quadratic equation by completing the square.

1. $x^{2}+10x-1=0$ 2. $x^{2}=-2x+7$

3. $-x^{2}+6x+10=0$

4. Put $y=x^{2}-6x+4$ into vertex form, by completing the square.

5. What values of *k* would make this a perfect square trinomial? $x^{2}+kx+196$

STATION #6 – THE QUADRATIC FORMULA

Solve each equation using the Quadratic Formula.

1. $x^{2}-8x+15=0$

2. $2x^{2}+3=7x$

Evaluate the discriminant for each equation and determine the number and types of roots.

3. $5x+1=3x^{2}$

4. $4x^{2}+4x=-1$