Name:_____ Date:_____

UNIT 9 **LESSON 7**

Do Now: Solve the following quadratic equation by **completing the square** $x^2+8x-9=0$

AIM: QUADRATIC EQUATION IN VERTEX FORM- DAY 1

Directions: Write each quadratic equation in vertex form by completing the square. Then, identify the quadratic equation's turning point.

1) $y=x^2-8x+11$

2) $f(x) = x^2 + 6x - 2$

Step 1: Move the constant ("c" value) to the right side.

Step 2: Take half of the "b" value and square it and add it to BOTH sides.

Step 3: Make the left side a perfect square trinomial.

Step 4: Factor the perfect square trinomial and simplify the right side.

Step 5: Solve for y

$$\boldsymbol{y = (x - h)^2 + k}$$

Step 6: Identify the turning point (h,k)

Step 7: Check the vertex in the calculator.

3) $h(x) = x^2 - 2x + 11$

4) $f(x) = x^2 + 8x$

Step 1: Move the constant ("c" value) to the right side.

Step 2: Take half of the "b" value and square it and add it to BOTH sides.

Step 3: Make the left side a perfect square trinomial.

Step 4: Factor the perfect square trinomial and simplify the right side.

Step 5: Solve for y

$$\boldsymbol{y = (x - h)^2 + k}$$

Step 6: Identify the turning point (h,k)

Step 7: Check the vertex in the calculator.