**Reflective Portfolio**

**DIRECTIONS: Print and complete! Hand it in inside your 2 pocket folder along with previous units!!**

**Unit #5: Quadratics**

**Section #1: Vocabulary (words and/or diagrams)**

**Define each:**

|  |  |
| --- | --- |
| **Roots** | **Focus** |
| **Identity** | **Directrix** |
| **Maximum** | **Vertex (turning point)** |
| **Minimum** | **Locus** |

**Section #2: Formulas/Equations/Rules**

|  |  |
| --- | --- |
| **Standard form of quadratic equation** | **Quadratic formula** |
| **Vertex form of quadratic equation** | **Center-radius form for equation of a circle** |
| **Combination of standard and vertex form** | **Square Root Property** |
| **Distance formula** | **Perfect square trinomial identities** |

**Section #3: Key methods and concepts**

* **Types of factoring (GCF, DOPS, Trinomials including with a>1, Factor by Grouping)**
1. ** 2)  3)  4) **
* **Show the process for changing standard form to center-radius form of a circle:**

 **5) **

6) **Solve algebraically,  and graph the set on a number line and write the solution in set builder notation**

**7) Five ways to solve a quadratic equation: *(#B,C,D-put in simplest radical form)***

1. **Solve by factoring:** **b. Solve by using quadratic formula:** 
2. **Solve by completing the square:** 

1. **Solve by using square root property**
2. **Solve by graphing: Please show a sketch, window and labeled axes.**

**An object is launched at 19.6 meters per second (m/s) from a 58.8-meter tall platform. The equation for the object's height s at time t seconds after launch is s(t) = –4.9t2 + 19.6t + 58.8, where s is in meters. When does the object strike the ground?**

1. **Put the equation into VERTEX FORM:**

**9) **

**Vertex = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**9) Determine the equation of a parabola given the focus and directrix: Focus ( 3,5)**

|  |  |
| --- | --- |
| **Method 1**: | **Method 2:**  where p = distance from vertex to focus. If parabola facing up, p is “+”, facing down, p is “-“ |
| 1. ***Write equation in standard form.***
 | 1. ***Write equation in vertex form.***
 |

**Answers: 1)** $3x(x^{2}-8)$ **2)** $(9+4x^{2})(3+2x)(3-2x)$ **3)** $(5x-2)(x-3)$ **4)** $(2x-3)(x^{2}-3)$ **5)** $(x+1)^{2}+(y-12)^{2}=25$ **6)** $\{x<-4orx>2\}$ **7) a)** $x=-\frac{4}{3}, 6$ **b)** $\frac{9}{2}\pm \frac{\sqrt{3}}{2}$ **c)** $-1\pm \frac{\sqrt{5}}{2}$ **d)** $-1\pm \sqrt{2}$ **e) 6 secs 8)**$(-2,21) y=-4\left(x+2\right)^{2}+21$ **9) a)** $y=\frac{1}{8}x^{2}-\frac{3}{4}x+\frac{33}{8}$ **b)**