Algebra 2 Name:\_\_\_\_\_\_\_\_\_\_\_\_

Day 28: Solving and Graphing with Completing the Square

Last class we learned the process for Completing the Square. Here’s an example as a reminder:

|  |  |
| --- | --- |
| Step 1: Divide 6x by 2.  (You divide by 2 because squares have sides with the same length)  Step 2: Calculate .  (You calculate 3 squared because we are literally making a square)  Step 3: Subtract 9 from 11.  (You subtract 9 because those “fit” inside the square, leaving you with 2 “leftovers”)  Step 4: Write in vertex form. |  |

Use the drawings to write each equation in standard form and in vertex form.

|  |  |  |
| --- | --- | --- |
| Standard Form | Drawing | Vertex Form |
|  |  |  |
|  |  |  |
|  |  |  |

**We did these problems before in this unit. Try to solve them again. Notice how the equations are all in vertex form.**

|  |  |
| --- | --- |
| **Equations** | **Graphs:** |
|  |  |
|  |  |
|  |  |

**Now you will get equations in STANDARD form. First, complete the square to rewrite the equations in VERTEX form. Then, solve for x. Check with the graphs.**

|  |  |
| --- | --- |
| **Equations** | **Graphs:** |
|  |  |
|  |  |
|  |  |

**Reflect:**

1. **What part of the graph does STANDARD form tell you?**

1. **What part of the graph does VERTEX form tell you? (Don’t overthink it)**

1. **What part(s) of the graph are the SOLUTIONS to the equation?**

**Mixed Practice: Solve each equation below by completing the square. Check your answers by graphing.**



1. **Can you explain why you got different numbers of solutions in those problems? Use your graphs to help explain.**