Graphing & Writing Solutions to Quadratic Inequalities

For each quadratic, I have solved for the vertex, y-intercept and zeros. Your job is to graph the equation on the right, and then, below, to graph each different type of inequality. Remember:

|  |  |  |  |
| --- | --- | --- | --- |
| If you have  or you have | If you have  or you have | If you have  or you have | If you have  or you have |
| No “or equal” means the curve is DOTTED  \_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_  *y* is less than, so we will shade on the side of curve that is below the vertex | “Or equal” makes the curve  SOLID  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  *y* is less than, so we will shade on the side of curve that is below the vertex | No “or equal” means the curve is DOTTED  \_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_  *y* is greater than, so we shade on the side of curve that is above the vertex | “Or equal” makes the curve  SOLID  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  *y* is greater than, so we shade on the side of curve that is above the vertex |
| If the shaded area is the **inside** of the parabola, the solutions will be: | If the shaded area is the **inside** of the parabola, the solutions will be: | If the shaded area is the **inside** of the parabola, the solutions will be: | If the shaded area is the **inside** of the parabola, the solutions will be: |
| If the shaded area is the **outside** of the parabola, the solutions will be:  *or* | If the shaded area is the **outside** of the parabola, the solutions will be:  *or* | If the shaded area is the **outside** of the parabola, the solutions will be:  *or* | If the shaded area is the **outside** of the parabola, the solutions will be:  *or* |

|  |  |  |  |  |  |
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| **1.** |  | | Zeros:  Zeros: | |  |
| Vertex in standard form:  Vertex: |  |
|  | |  | |  |  |
|  | |  | |  |  |
| Solutions: | | Solutions: | | Solutions: | Solutions: |

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| **2.** |  | | Zeros:  Zeros: | |  |
| Vertex in standard form:  Vertex: |  |
|  | |  | |  |  |
|  | |  | |  |  |
| Solutions: | | Solutions: | | Solutions: | Solutions: |

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| **3.** |  | | Zeros:  Zeros: *It’s a double root.* | |  |
| Vertex in standard form:  Vertex: |  |
|  | |  | |  |  |
|  | |  | |  |  |
| Solutions: | | Solutions: | | Solutions: | Solutions: |

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| **4.** | = | Zeros:  Zeros: | |  |
| Vertex in standard form:  Vertex: |  |
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| Solutions: | Solutions: | | Solutions: | Solutions: |

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| --- | --- | --- | --- | --- |
| **5.** | : | *not in standard form just set = 0!*  Zeros:    or    Zeros: | |  |
| Vertex in vertex form:  *(Vertex is in the equation)*  Vertex: |  |
|  |  | |  |  |
|  |  | |  |  |
| Solutions: | Solutions: | | Solutions: | Solutions: |

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| **6.** |  | *not in standard form just set = 0!*  Zeros:      or  Zeros: | |  |
| Vertex in vertex form:  *(Vertex is in the equation)*  Vertex: |  |
|  |  | |  |  |
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| Solutions: | Solutions: | | Solutions: | Solutions: |

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| **7.** |  | | *not in standard form just set = 0!*  Zeros:      or  Zeros: | |  |
| Vertex in vertex form:  *(Vertex is in the equation)*  Vertex: |  |
|  | |  | |  |  |
|  | |  | |  |  |
| Solutions: | | Solutions: | | Solutions: | Solutions: |