Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Period \_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Use simplest radical form where appropriate (no decimals!)**

**1.** Find the vertex, focus, and directrix of each parabola, then graph the parabola.

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **a.** | (*x* – 1) 2 = 4(*y* – 4)   |  |  | | --- | --- | | **GraphPaper-6,6,6,6a** | vertex: | | focus: | | directrix: | | **b.** | *x* – 3 = -(*y* – 2) 2   |  |  | | --- | --- | | **GraphPaper-6,6,6,6a** | vertex: | | focus: | | directrix: | |
|  | **c.** | (*y* – 2) 2 = 8(*x* – 1)   |  |  | | --- | --- | | **GraphPaper-6,6,6,6a** | vertex: | | focus: | | directrix: | | **d.** | -2(*y* – 3) = (*x* – 3) 2   |  |  | | --- | --- | | **GraphPaper-6,6,6,6a** | vertex: | | focus: | | directrix: | |

**2.** Write the standard form equation of the parabola shown or described.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **a.** |  | **b.** |  |
|  | **c.** | Vertex (10, 0); Directrix *x* = 8 | **d.** | Vertex (0, 0); Focus (0, 6) |

***2, continued.*** *Write the standard form equation of the parabola shown or described.*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **a.** | Vertex (5, 2); directrix *y* = 1 | **b.** | Directrix *x* = 3; focus (1, 0) |

**3.** Convert each equation to standard form, then find the parabola’s vertex, focus, & directrix.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **a.** | standard form:   |  |  |  | | --- | --- | --- | | vertex: | focus: | directrix: | | **b.** | standard form:   |  |  |  | | --- | --- | --- | | vertex: | focus: | directrix: | |
|  | **c.** | standard form:   |  |  |  | | --- | --- | --- | | vertex: | focus: | directrix: | | **d.** | 8*x*2 + 16*x* + 4 – *y* = 0  standard form:   |  |  |  | | --- | --- | --- | | vertex: | focus: | directrix: | |