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.** | $$y^{2}+8x-2y-15=0$$standard form:

|  |  |  |
| --- | --- | --- |
| vertex: | focus: | directrix: |

 | **b.** | $$x^{2}+10x-6y+7=0$$standard form:

|  |  |  |
| --- | --- | --- |
| vertex: | focus: | directrix: |

 |
|  | **c.** | $$y^{2}-12y+4x+4=0$$standard form:

|  |  |  |
| --- | --- | --- |
| vertex: | focus: | directrix: |

 | **d.** | 8*x*2 + 16*x* + 4 – *y* = 0standard form:

|  |  |  |
| --- | --- | --- |
| vertex: | focus: | directrix: |

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