

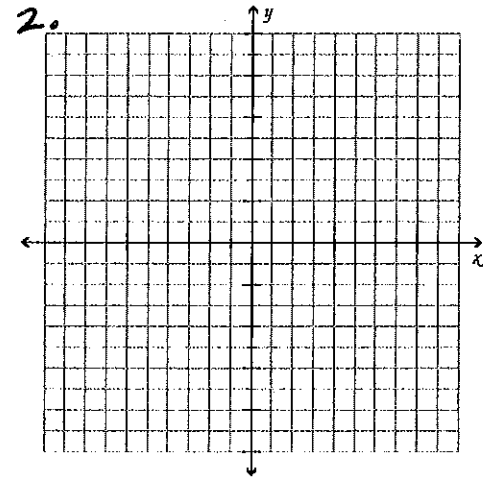
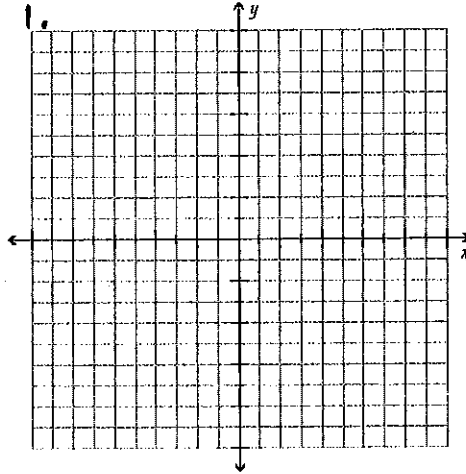
**10.2 #1**

**Parabolas of the form  $y = ax^2$  and  $y = a(x-h)^2 + k$**

Write each equation in standard form. Find all pertinent information. Sketch the parabolas.

1.  $2x^2 = -y$

vertex: \_\_\_\_\_  
 Value of p: \_\_\_\_\_  
 Focus : \_\_\_\_\_  
 Directrix: \_\_\_\_\_  
 Axis of Symmetry: \_\_\_\_\_

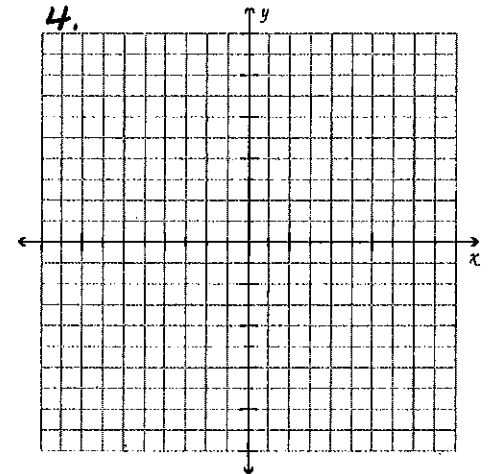
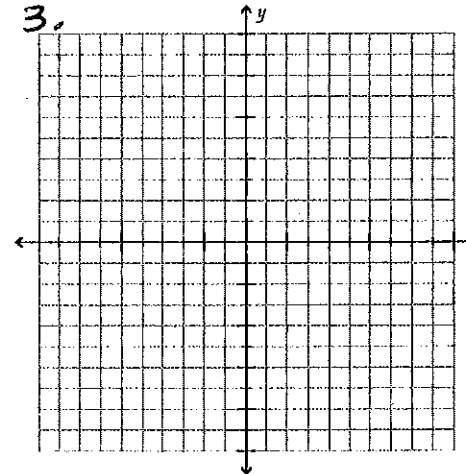


2.  $x^2 = 8y$

vertex: \_\_\_\_\_  
 Value of p: \_\_\_\_\_  
 Focus : \_\_\_\_\_  
 Directrix: \_\_\_\_\_  
 Axis of Symmetry: \_\_\_\_\_

3.  $x^2 + 12y = 0$

vertex: \_\_\_\_\_  
 Value of p: \_\_\_\_\_  
 Focus : \_\_\_\_\_  
 Directrix: \_\_\_\_\_  
 Axis of Symmetry: \_\_\_\_\_

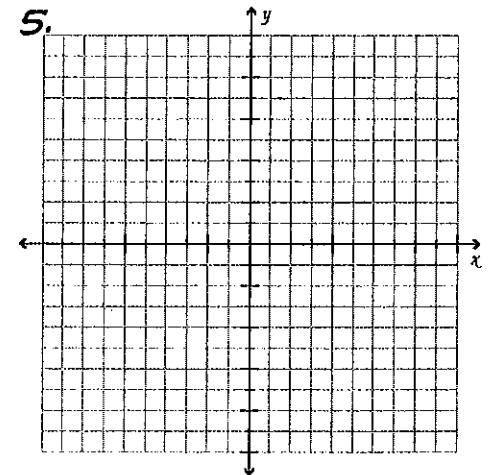


4.  $-24y + x^2 = 0$

vertex: \_\_\_\_\_  
 Value of p: \_\_\_\_\_  
 Focus : \_\_\_\_\_  
 Directrix: \_\_\_\_\_  
 Axis of Symmetry: \_\_\_\_\_

5.  $x^2 + 10x - 4y + 1 = 0$

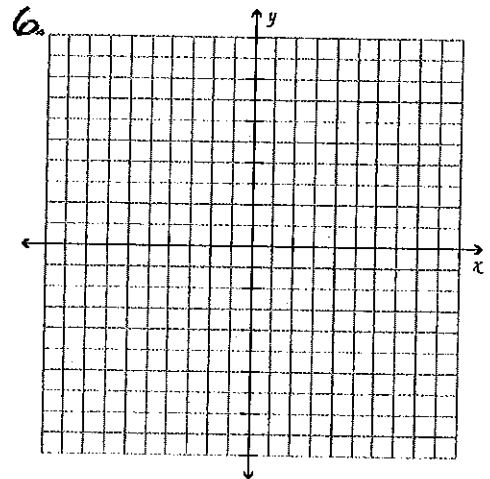
vertex: \_\_\_\_\_  
 Value of p: \_\_\_\_\_  
 Focus : \_\_\_\_\_  
 Directrix: \_\_\_\_\_  
 Axis of Symmetry: \_\_\_\_\_



**Parabolas of the form  $y = ax^2$  and  $y = a(x-h)^2 + k$**

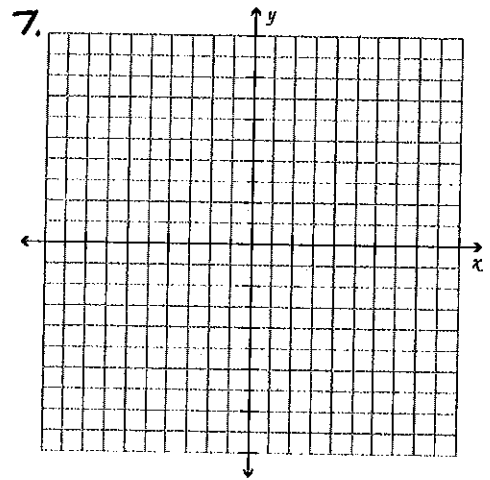
6.  $x^2 - 6x - 8y + 25 = 0$

vertex: \_\_\_\_\_  
 Value of p: \_\_\_\_\_  
 Focus : \_\_\_\_\_  
 Directrix: \_\_\_\_\_  
 Axis of Symmetry: \_\_\_\_\_



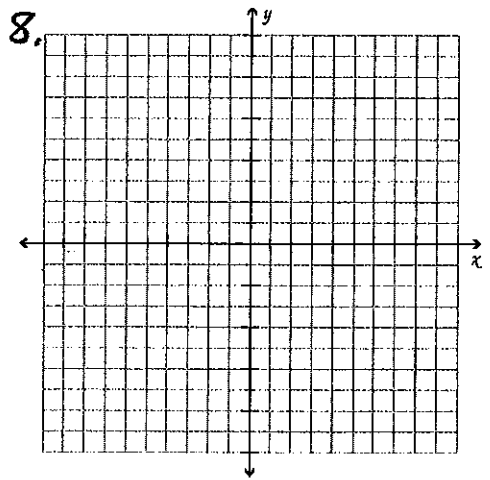
7.  $x^2 + 4x + 8y + 12 = 0$

vertex: \_\_\_\_\_  
 Value of p: \_\_\_\_\_  
 Focus : \_\_\_\_\_  
 Directrix: \_\_\_\_\_  
 Axis of Symmetry: \_\_\_\_\_



8.  $x^2 + 6x + 2y + 13 = 0$

vertex: \_\_\_\_\_  
 Value of p: \_\_\_\_\_  
 Focus : \_\_\_\_\_  
 Directrix: \_\_\_\_\_  
 Axis of Symmetry: \_\_\_\_\_



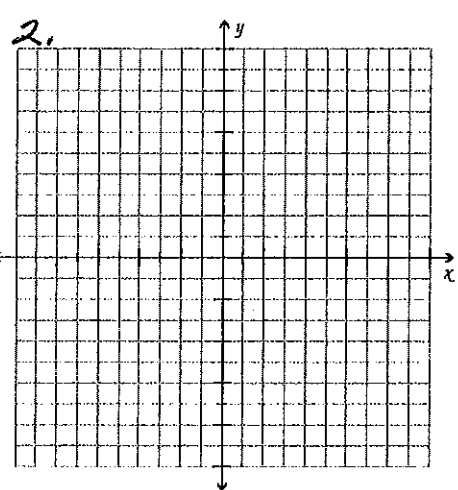
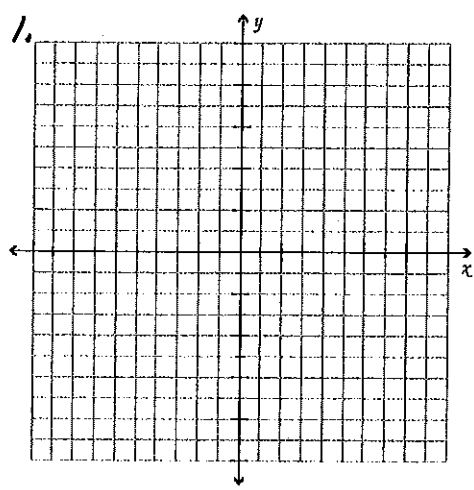
**10.2 # 2**

**Parabolas of the form  $x = ay^2$  and  $x = a(y-k)^2 + h$**

Write each equation in standard form. Find all pertinent information. Sketch the parabolas.

1.  $4y^2 = x$

vertex: \_\_\_\_\_  
 Value of p: \_\_\_\_\_  
 Focus : \_\_\_\_\_  
 Directrix: \_\_\_\_\_  
 Axis of Symmetry: \_\_\_\_\_

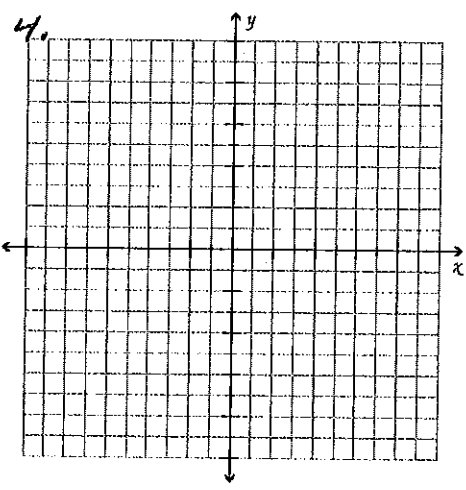
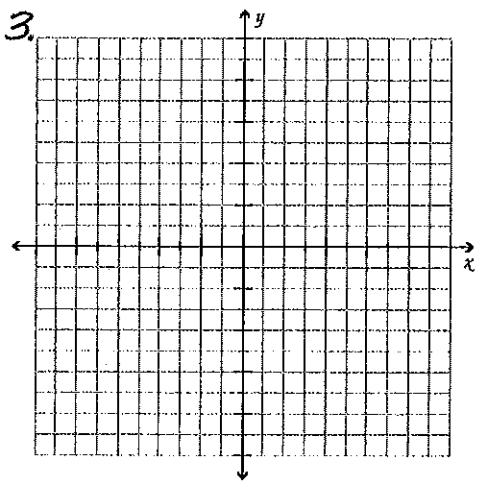


2.  $-4x + 9y^2 = 0$

vertex: \_\_\_\_\_  
 Value of p: \_\_\_\_\_  
 Focus : \_\_\_\_\_  
 Directrix: \_\_\_\_\_  
 Axis of Symmetry: \_\_\_\_\_

3.  $3y^2 - 12x = 0$

vertex: \_\_\_\_\_  
 Value of p: \_\_\_\_\_  
 Focus : \_\_\_\_\_  
 Directrix: \_\_\_\_\_  
 Axis of Symmetry: \_\_\_\_\_

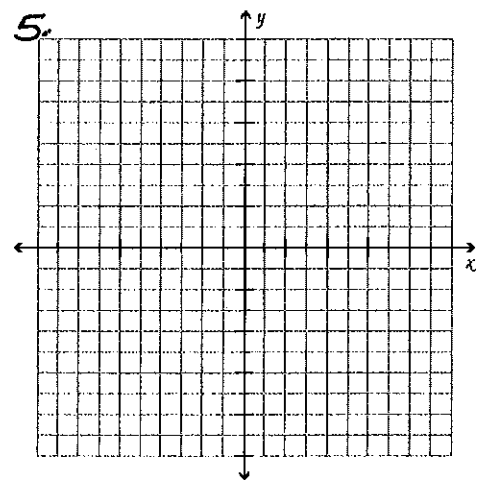


4.  $x + \frac{1}{8}y^2 = 0$

vertex: \_\_\_\_\_  
 Value of p: \_\_\_\_\_  
 Focus : \_\_\_\_\_  
 Directrix: \_\_\_\_\_  
 Axis of Symmetry: \_\_\_\_\_

5.  $y^2 - 2y + 16x - 31 = 0$

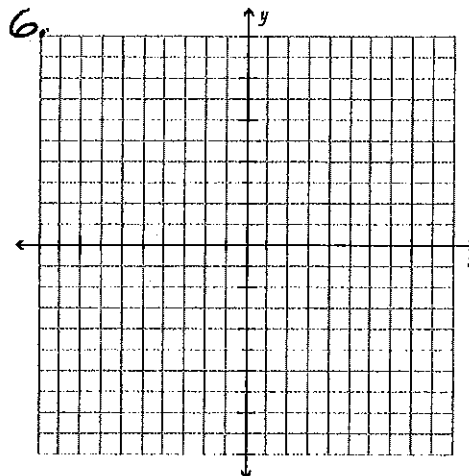
vertex: \_\_\_\_\_  
 Value of p: \_\_\_\_\_  
 Focus : \_\_\_\_\_  
 Directrix: \_\_\_\_\_  
 Axis of Symmetry: \_\_\_\_\_



**Parabolas of the form  $x = ay^2$  and  $x = a(y - k)^2 + h$**

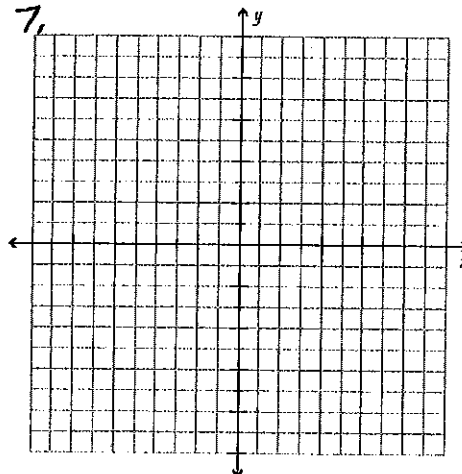
6.  $y^2 - 4y - 5x - 1 = 0$

vertex: \_\_\_\_\_  
 Value of p: \_\_\_\_\_  
 Focus : \_\_\_\_\_  
 Directrix: \_\_\_\_\_  
 Axis of Symmetry: \_\_\_\_\_



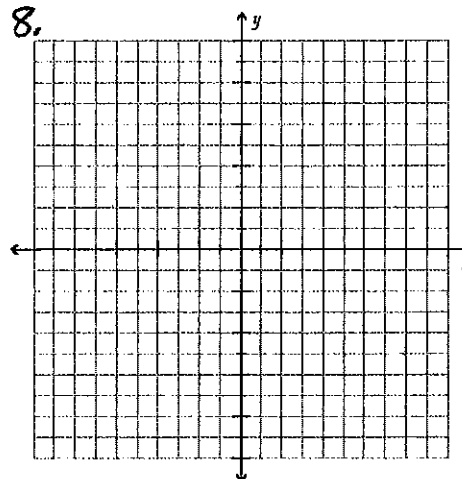
7.  $3y^2 - x - 6y + 5 = 0$

vertex: \_\_\_\_\_  
 Value of p: \_\_\_\_\_  
 Focus : \_\_\_\_\_  
 Directrix: \_\_\_\_\_  
 Axis of Symmetry: \_\_\_\_\_



8.  $y^2 - 12y + 4x + 4 = 0$

vertex: \_\_\_\_\_  
 Value of p: \_\_\_\_\_  
 Focus : \_\_\_\_\_  
 Directrix: \_\_\_\_\_  
 Axis of Symmetry: \_\_\_\_\_



10.2 #3

**Parabolas Review***(1-4) Write the equation in standard form. Circle your answers.*

1.  $x^2 - 4y = 0$

2.  $x^2 - 8x - y + 19 = 0$

3.  $y^2 - 2x - 4y = -10$

4.  $x - \frac{1}{20}y^2 = 0$

*(5-8) Decide whether the parabola has a horizontal or vertical axis.  
Find the vertex, focus, directrix and axis of symmetry.*

5.  $y = 4x^2$

6.  $x = -\frac{1}{6}y^2$

axis: \_\_\_\_\_

axis: \_\_\_\_\_

vertex: \_\_\_\_\_

vertex: \_\_\_\_\_

Focus: \_\_\_\_\_

Focus: \_\_\_\_\_

Directrix: \_\_\_\_\_

Directrix: \_\_\_\_\_

Axis of Sym.: \_\_\_\_\_

Axis of Sym.: \_\_\_\_\_

7.  $y = -\frac{1}{2}(x-6)^2 + 4$

8.  $x = 2(y+3)^2 - 7$

axis: \_\_\_\_\_

axis: \_\_\_\_\_

vertex: \_\_\_\_\_

vertex: \_\_\_\_\_

Focus: \_\_\_\_\_

Focus: \_\_\_\_\_

Directrix: \_\_\_\_\_

Directrix: \_\_\_\_\_

Axis of Sym.: \_\_\_\_\_

Axis of Sym.: \_\_\_\_\_

*(9-10) Find the equation of the parabola with a vertex at the origin and the given focus.*

9. (8,0) \_\_\_\_\_

10. (0,-2) \_\_\_\_\_

***Write the equation of the parabola with the given vertex and focus.***

11. Vertex:  $(1, -2)$

Focus:  $(1, 1)$

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12. Vertex:  $(3, -2)$

Focus:  $(5, -2)$

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13. Vertex:  $(2, 5)$

Focus:  $(2, -3)$

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14. Vertex:  $(1, -3)$

Focus:  $(1\frac{1}{4}, -3)$

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