

**Conics - Parabolas Notes**

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

**Introduction to Conic Sections:**

1) General Form:  $Ax^2 + Bxy + Cy^2 + Dx + Ey + F = 0$

2) Parabola: if  $A = 0$  or  $C = 0$

3) Circle: if  $A = C$

4) Ellipse: if  $A \neq C$  and if  $A$  and  $C$  have the same sign.

5) Hyperbola: if  $A$  and  $C$  have opposite signs.

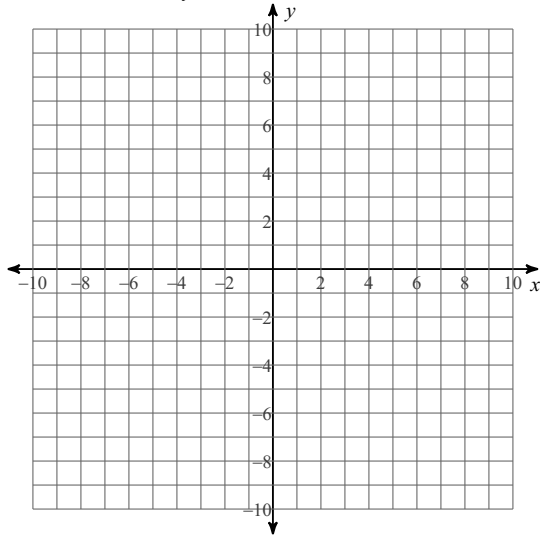
**Introduction to Conics:**

6)  $(x - h)^2 = 4p(y - k)$

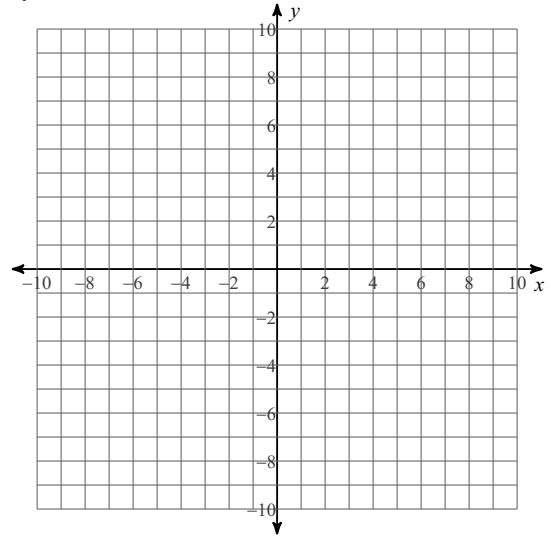
7)  $(y - k)^2 = 4p(x - h)$

**Sketch the parabola.**

8)  $(x - 3)^2 = 12(y + 1)$



9)  $(y - 4)^2 = -8(x - 2)$



**Use the information provided to write the vertex form equation of each parabola.**

10) Vertex:  $(3, 4)$   
Focus:  $(5, 4)$

11) Directrix:  $y = -5$   
Focus:  $(2, 1)$

**State the vertex, focus, directrix, focal width, focal length of the given parabola.**

12)  $(y + 2)^2 = 3(x - 1)$

**Convert the parabola to standard form.**

13)  $x^2 - 6x - 3y + 3 = 0$

14)  $2y^2 - 4x + 8y - 4 = 0$