

**CIRCLES AND PARABOLAS**

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**Identify the center and radius of each.**

1)  $x^2 + y^2 = 49$

2)  $x^2 + y^2 = 324$

3)  $(x + 2)^2 + (y - 3)^2 = 183$

4)  $(x + 7)^2 + (y + 8)^2 = 64$

5)  $(x + 10)^2 + (y + 9)^2 = 36$

6)  $(x + 5)^2 + (y - 10)^2 = 9$

7)  $x^2 + (y + 2)^2 = 121$

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

9)  $364 + 28y + y^2 + x^2 = -26x$

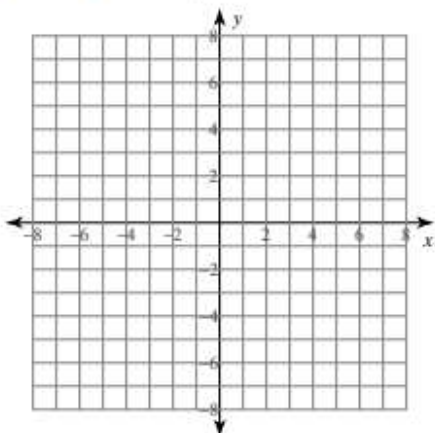
10)  $x^2 + y^2 + 24x + 10y + 160 = 0$

11)  $-6x = -x^2 + 32y - 264 - y^2$

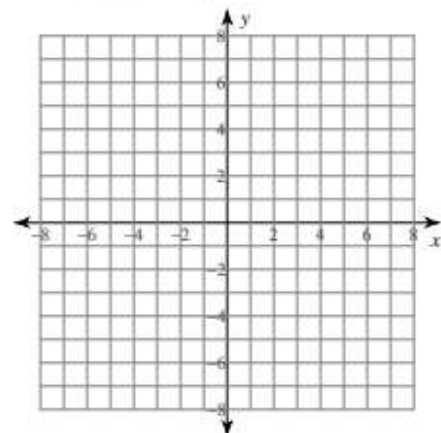
12)  $-6x + x^2 = 97 + 10y - y^2$

**Identify the center and radius of each. Then sketch the graph.**

13)  $(x + 1)^2 + (y - 2)^2 = 9$



14)  $(x + 2)^2 + (y + 3)^2 = 4$



**CIRCLES AND PARABOLAS**

Identify the vertex, axis of symmetry, and direction of opening of each.

1)  $y = 2(x + 10)^2 + 1$

2)  $y = -\frac{1}{3}(x - 7)^2 + 1$

3)  $y = -\frac{1}{3}x^2 + \frac{16}{3}x - \frac{46}{3}$

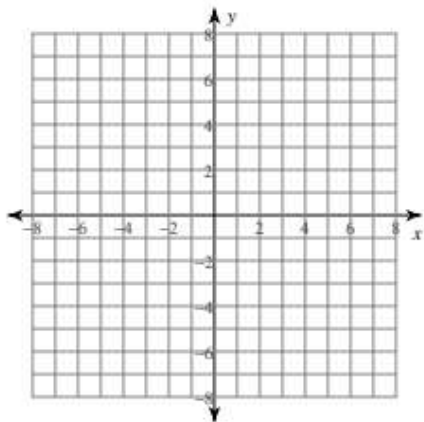
4)  $y = 2x^2 + 36x + 166$

5)  $y = x^2 + 4x - 5$

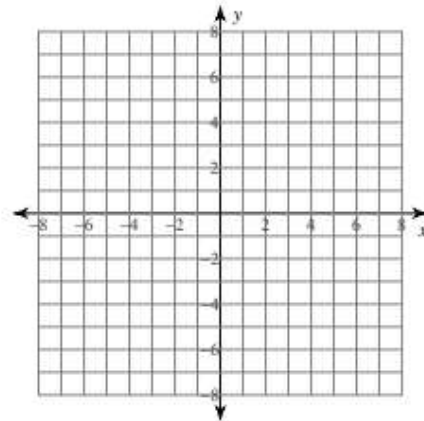
6)  $y = 2x^2 + 8x + 16$

Graph each equation.

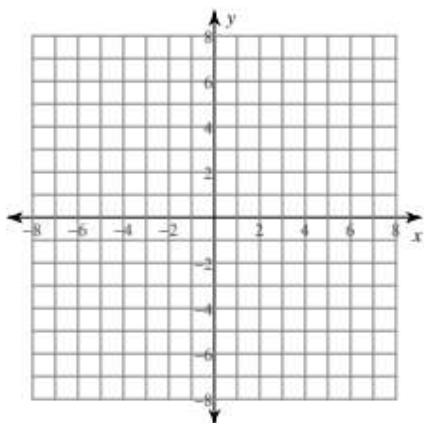
7)  $y = 2x^2$



8)  $x = \frac{1}{4}y^2$



9)  $y = -(x - 3)^2 - 1$



10)  $x = -(y + 3)^2 + 4$

