

What are some identifying features about each conic section?

circles:

parabolas:

ellipses:

hyperbolas:

I. Classify each conic section.

1. $x^2 + y^2 = 30$

2. $x^2 + y^2 = 36$

3. $\frac{x^2}{9} + \frac{y^2}{16} = 1$

4. $x = y^2$

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

6. $\frac{y^2}{25} - \frac{x^2}{25} = 1$

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

8. $(x - 1)^2 + \frac{y^2}{25} = 1$

II. Classify each conic section and write its equation in standard form.

9. $-x^2 + 10x + y - 21 = 0$

10. $-2y^2 + x - 20y - 49 = 0$

11. $x^2 + 2x + y - 1 = 0$

12. $x^2 + y^2 + 6x - 2y + 9 = 0$

13. $x^2 - y^2 - 2x - 8 = 0$

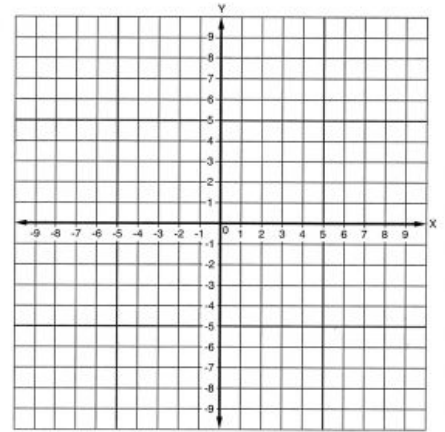
14. $3x^2 + 30x + y + 79 = 0$

15. $-9x^2 + y^2 - 72x - 153 = 0$

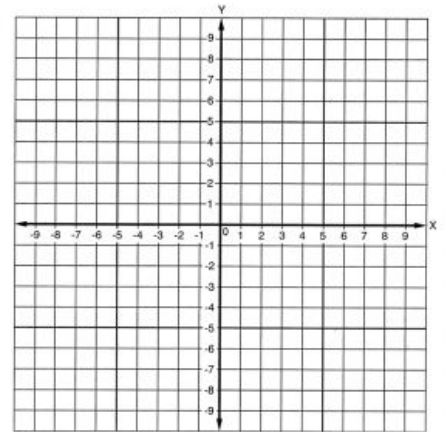
16. $-y^2 + x + 8y - 17 = 0$

III. Classify each conic section and write its equation in standard form. Analyze and sketch the graph.

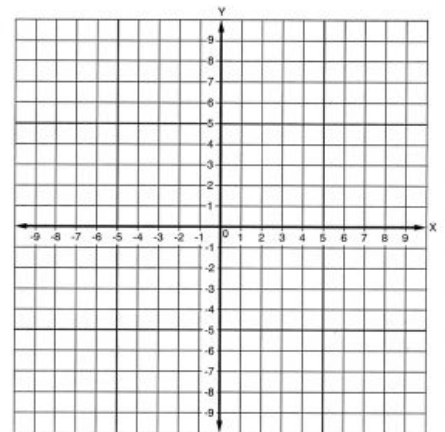
17. $-2y^2 + x - 4y + 1 = 0$



18. $-25x^2 + y^2 - 100x - 125 = 0$



19. $4x^2 + 4y^2 - 20x - 32y + 81 = 0$



20. $9x^2 + 4y^2 - 54x - 8y - 59 = 0$

