

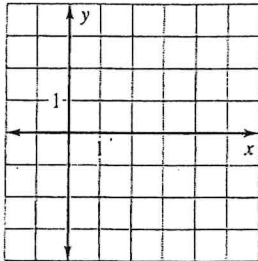
LESSON
9.6

-D

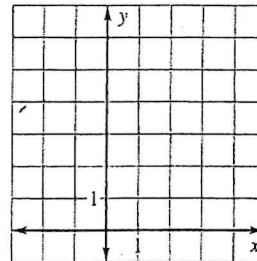
Translations #4

Graph the equation. Identify the important characteristics of the graph.

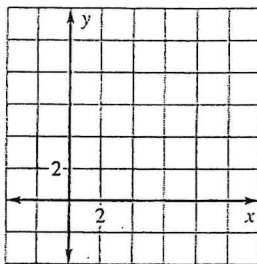
1. $(x - 2)^2 + y^2 = 4$



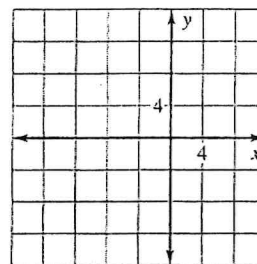
2. $\frac{(x - 1)^2}{9} + \frac{(y - 3)^2}{4} = 1$



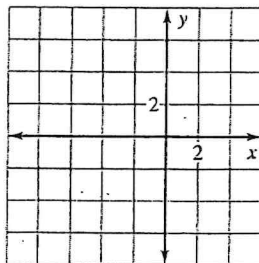
3. $(x - 4)^2 = 4(y - 2)$



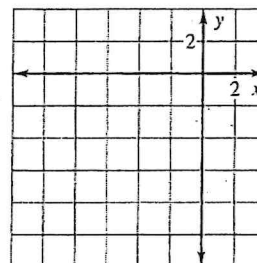
4. $\frac{(x + 3)^2}{16} - \frac{(y - 1)^2}{25} = 1$



5. $\frac{(x + 3)^2}{16} + \frac{(y - 1)^2}{25} = 1$



6. $(x + 4)^2 + (y + 4)^2 = 36$



Write an equation of the conic section.

7. Circle with a center at (3, 4) and a radius of 3
8. Parabola with vertex (2, 1) and focus at (2, 3)
9. Ellipse with vertices at (1, 1) and (7, 1) and co-vertices at (4, -1) and (4, 3)
10. Hyperbola with vertices at (2, -2) and (2, 2) and foci at (2, -4) and (2, 4)

Identify the line(s) of symmetry for the conic section.

11. $(y + 1)^2 = 8(x - 4)$

12. $(x - 2)^2 + (y - 6)^2 = 25$

13. $\frac{(x - 2)^2}{36} + \frac{y^2}{16} = 1$

14. $\frac{(y - 1)^2}{9} - (x - 5)^2 = 1$

Use the discriminant to classify the conic section.

15. $x^2 + 8x + 2y + 24 = 0$

16. $2x^2 + 2y^2 - 6x - 4y + 16 = 0$

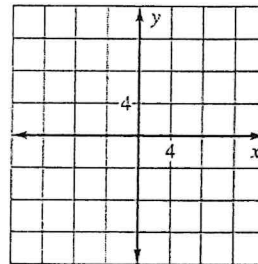
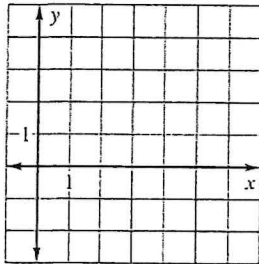
17. $x^2 - y^2 - 2x + 7y = 0$

18. $x^2 + 9y^2 + 2x - 18y - 20 = 0$

Classify the conic section and write its equation in standard form. Then graph the equation.

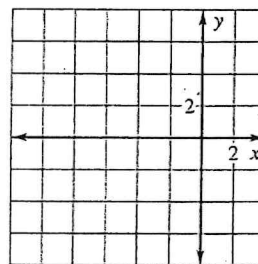
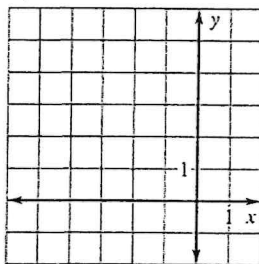
19. $x^2 + y^2 - 6x - 2y + 1 = 0$

20. $y^2 - 12x - 72 = 0$



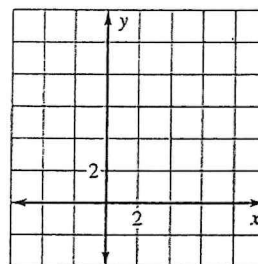
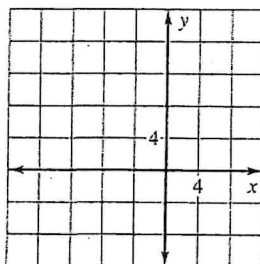
21. $9x^2 + 4y^2 + 54x - 16y + 61 = 0$

22. $x^2 + y^2 + 8x + 2y + 1 = 0$



23. $-25x^2 + 16y^2 - 150x - 96y - 481 = 0$

24. $x^2 + 9y^2 - 8x - 90y + 232 = 0$



25. **Sprinkler System** A sprinkler system shoots a stream of water that follows a parabolic path. The nozzle is fastened at ground level. The water reaches a maximum height of 16 feet and a horizontal distance of 32 feet from the nozzle. Find the equation that describes the path of the water.