

2. ★ **WRITING** Explain how the discriminant of a general second-degree equation can be used to identify what conic the equation represents.

CLASSIFYING CONICS Use the discriminant to classify the conic section.

28. $6x^2 - 2y^2 + 24x + 2y - 1 = 0$

29. $x^2 + y^2 - 10x - 6y + 18 = 0$

30. $y^2 - 10y - 5x + 57 = 0$

31. $4x^2 + y^2 - 48x - 14y + 189 = 0$

32. $9x^2 + 4y^2 + 8y + 18x - 41 = 0$

33. $x^2 - 18x + 6y + 99 = 0$

34. $x^2 + y^2 - 6x + 8y - 24 = 0$

35. $8x^2 - 9y^2 - 40x + 4y + 145 = 0$

36. ★ **MULTIPLE CHOICE** The equation $4x^2 + y^2 + 32x - 10y + 85 = 0$ represents what conic section?

(A) Circle

(B) Ellipse

(C) Hyperbola

(D) Parabola

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

37. $x^2 + y^2 - 14x + 4y - 11 = 0$

38. $x^2 + 4y^2 - 10x + 16y + 37 = 0$

39. $x^2 - 16x - 8y + 80 = 0$

40. $9y^2 - x^2 - 54y + 8x + 56 = 0$

41. $9x^2 + 4y^2 - 36x - 24y + 36 = 0$

42. $y^2 + 14y + 16x + 33 = 0$

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

44. $x^2 - 4y^2 + 8x - 24y - 24 = 0$