Worksheet

9.6-C

p. 655 #2, 28-34 even, 37-44

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?

Ⓐ Circle Ⓑ Ellipse Ⓒ Hyperbola Ⓓ 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. $x^2 - 4y^2 + 8x - 24y - 24 = 0$