10 CHAPTER REVIEW

10.7 Interpret the Discriminant

pp. 678–683

EXAMPLE

Equation $ax^2 + bx + c = 0$	Discriminant $b^2 - 4ac$	Number of solutions
a. $-16x^2 + 8x - 1 = 0$	$8^2 - 4(-16)(-1) = 0$	One solution
b. $4x^2 - 5x + 2 = 0$	$(-5)^2 - 4(4)(2) = -7$	No solution
c. $x^2 + 3x = 0$	$3^2 - 4(1)(0) = 9$	Two solutions

EXERCISES

EXAMPLES 1 and 2 on pp. 678–679 for Exs. 31–36

Tell whether the equation has *two solutions*, *one solution*, or *no solution*.

31. $x^2 - 2x + 2 = 0$

32. $4g^2 + 12g + 9 = 0$

33. $5w^2 - 4w - 1 = 0$

34. $\frac{1}{8}v^2 - 6 = 0$

35. $n^2 - 3n = 4 - 2n^2$

36. $2q^2 + 1 = 3q - 5$

10.8 Compare Linear, Exponential, and Quadratic Models

pp. 684–691

EXAMPLE

Use differences or ratios to tell whether the table of values represents a *linear function*, an *exponential function*, or a *quadratic function*.

a.

x	−1	0	1	2
y	5	3	1	−1

Differences: −2 −2 −2

▶ The table of values represents a linear function.

b.

x	−1	0	1	2
y	4	5	4	1

First differences: 1 −1 −3

Second differences: −2 −2

▶ The table of values represents a quadratic function.

EXERCISES

EXAMPLE 2 on p. 685 for Exs. 37–38

Tell whether the table of values represents a *linear function*, an *exponential function*, or a *quadratic function*.

37.

x	1	2	3	4	5	6
y	1	2	4	8	16	32

38.

x	−2	−1	0	1	2	3
y	0	3	6	9	12	15