

EXAMPLE 5

on p. 768
for Exs. 44–47

WRITING EQUATIONS Tell whether the table represents inverse variation. If so, write the inverse variation equation.

44.

x	4	8	12	16	20
y	1	2	3	4	5

45.

x	-20	-5	14	32	50
y	-80	-20	56	128	200

46.

x	-10	-5	15	20	40
y	-30	-60	20	15	7.5

47.

x	-12	-10	-8	-5	-4
y	2	2.4	3	4.8	6

48. **REASONING** The variables x and y vary inversely. How does the value of y change if the value of x is doubled? tripled? Give examples.

 **GEOMETRY** Translate the verbal sentence into an equation using the appropriate geometric formula. Then tell whether the equation represents *direct variation*, *inverse variation*, or *neither*.

49. The circumference of a circle with radius r units is C units.

50. The perimeter of a rectangle with length l units and width w units is 27 units.

51. The volume of a rectangular prism with base B square units and height h units is 400 cubic units.

52. **CHALLENGE** The variables x and y vary inversely with constant of variation a . The variables y and z vary inversely with constant of variation b . Write an equation that gives z as a function of x . Then tell whether x and z vary *directly* or *inversely*.

53. **CHALLENGE** The points $(3, a^2 - 7a + 10)$ and $(3a + 1, a + 2)$ lie on the graph of an inverse variation equation. Find the coordinates of the points.

PROBLEM SOLVING

EXAMPLE 5

on p. 768
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54. **BICYCLES** The table shows the bicycle speed s (in miles per hour) for various pedaling speeds p (in pedal rotations per mile). Tell whether the table represents inverse variation. If so, write the inverse variation equation that relates p and s .

Pedaling speed, p (pedal rotations/mi)	831	612	420	305
Bicycle speed, s (mi/h)	4.33	5.88	8.57	11.8

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**EXAMPLE 6**

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for Exs. 55–56,
58

55. **ECONOMICS** The owner of an electronics store determines that the monthly demand d (in units) for a computer varies inversely with the price p (in dollars) of the computer. When the price is \$700, the monthly demand is 250 units. Write the inverse variation equation that relates p and d . Then find the monthly demand when the price is \$500.

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