Name _____ Class _____ Date _____

Reteaching 4-6

Inverse Variation

OBJECTIVE: Solving inverse variations **MATERIALS:** None

- The relationship shown by the equation $xy = k$, where $k \neq 0$, is called an inverse variation.
- The two quantities x and y multiplied together result in a constant k. As one quantity increases, the other decreases.

Example

Two young graduates from a business school decided to open a music store. On the first day of business, they charged \$12.00 per CD. They sold 138 CDs. On the basis of their research, they believe there is an inverse variation between sales and price. If they are correct and the price of the CDs is lowered, the number sold should increase. They decide to lower the price of the CDs to \$11.50 each. How many CDs can they expect to sell?

Price	No. Sold
\$12.00	138
\$11.50	x

← **Put the data in a table.**

← **Let x represent the missing quantity.**

(Price 1)(No. sold at price 1) = (Price 2)(No. sold at price 2) ← **Write an equation showing the relationship of the variables.**

$$(\$12.00)(138) = (\$11.50)(x)$$ ← **Substitute the values.**

$$1656 = 11.5x$$

$$x = 144$$ ← **Solve for x.**

Dropping the price by \$.50 will result in selling 144 CDs. This is an increase of 6 CDs.

Exercises

Refer to the example to answer each question.

1. How many CDs can the owners expect to sell if they drop the price to \$11.00? What if they raise the price to \$12.50? (Round your answers to the nearest whole number.)
2. If the owners want to sell 162 CDs, what price should they charge for each?
3. Make a table with the data from Exercises 1 and 2.

© Pearson Education, Inc., publishing as Pearson Prentice Hall. All rights reserved.