

Objective 1
Determine a unit rate

Vocab:

Ratio: A comparison between two different things.

Example 1:

PROBLEM

A leaking faucet drips into a bucket. The faucet drips at a constant rate. The level of water in the bucket rises 8 inches in 12 hours. What was the rate per hour of the water level change?

STEP 1

Determine how to solve the problem.

The problem asks for the rate per hour of the water level change. This is the number of inches the water level rises in an hour. To find this, write a ratio that represents 8 inches in 12 hours. Then divide to show this ratio as a rate per 1 hour.

STEP 2

Set up a ratio using the information given in the problem. Write the ratio showing the relationship of inches to hours.

$$\frac{8 \text{ inches}}{12 \text{ hours}}$$

STEP 3

Find the rate for 1 hour. Divide the number of inches and hours by 12.

$$\frac{8 \text{ inches} \div 12}{12 \text{ hours} \div 12} = \frac{\frac{8}{12} \text{ inches}}{\frac{12}{12} \text{ hours}} = \frac{\frac{2}{3} \text{ inch}}{1 \text{ hour}}$$

The water level changes at a rate of $\frac{2}{3}$ inch per hour.

ANSWER

$$\frac{2}{3} \text{ in./hr}$$

Guided Practice:

A leaking faucet drips into a bucket. The faucet drips at a constant rate. The level of water in the bucket rises 4 inches in 8 hours. What was the rate per hour of the water level change?

A robot painted 140 car parts in 4 minutes. It painted them at a constant rate. What was the rate per minute at which the robot painted the car parts?

Independent Practice:

A leaking faucet drips into a bucket. The faucet drips at a constant rate. The level of water in the bucket rises 6 inches in 12 hours. What was the rate per hour of the water level change?

A robot glued 188 cloth chairs in 4 hours. It glued them at a constant rate. What was the rate per hour at which the robot glued the cloth chairs?

A machine can make 258 parts in 3 hours, at a constant rate. How many parts does the machine make per hour?

Additional Help:

<http://www.brainingcamp.com/content/rates/lesson.php>

<http://www.calculatorsoup.com/calculators/math/unit-rate-calculator.php>