

Lesson 9-4

Reinforce Understanding

Apply Two-Variable Relationships to Solve Problems

I can write an equation to represent the relationship between two variable quantities and use it to solve a real problem.

Worked model

A press makes 22 posters each hour. Write an equation, then find the posters made in 15 hours.

1. Define: h = hours running, p = posters made. Posters depend on hours.
2. The rate is 22 posters for each hour, so the rule is $p = 22h$.
3. Substitute 15 for h : $22 \times 15 \rightarrow 330$ posters.
4. Check the context: many more hours gave a much larger count, so this fits.

Answer: $p = 22h$, so a 15-hour run makes 330 posters.

Practice

Complete each exercise. Show the reasoning that supports your answer.

1. The assembly line produces 2.5 cars per hour. How many cars does it produce in one 8-hour shift?

Circle the letter of the best answer. Show how you know.

- A. 10.5 cars
- B. 16 cars
- C. 20 cars
- D. 25 cars

2. Let h = hours of operation and c = cars produced. Which equation represents the assembly line?

Circle the letter of the best answer. Show how you know.

- A. $c = 2.5h$
- B. $c = 2.5 + h$
- C. $h = 2.5c$
- D. $c = h \div 2.5$

Show your work

3. Using the table (1 hour, 2.5 cars; 8 hours, 20 cars; 16 hours, 40 cars), how many cars are produced in 24 hours?

Circle the letter of the best answer. Show how you know.

- A. 26.5 cars
- B. 40 cars
- C. 50 cars
- D. 60 cars

Show your work
