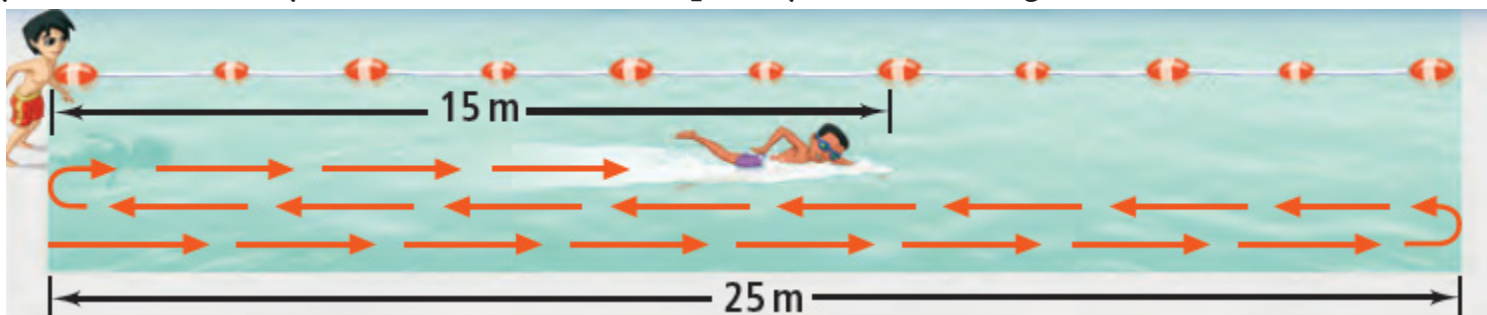


4-4

Writing a Function Rule

OBJECTIVE: I can write equations that represent functions**Warm-Up**

You and a friend are swimming 20 laps at the local pool. One lap is the distance across the pool and back. You both swim at the same rate. Your friend started first. The trail of arrows shows how far he has already swum. What equation gives the distance you have swum as a function of the number of laps your friend has swum? How far have you swum when your friend finishes? Explain your reasoning.



Essential Understanding

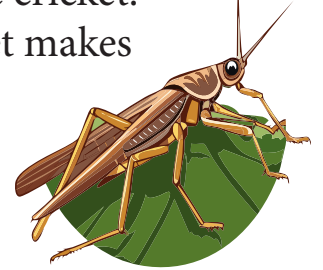
Essential Understanding Many real-world functional relationships can be represented by equations. You can use an equation to find the solution of a given real-world problem.



Example

#1 Writing a Function Rule

Insects You can estimate the temperature by counting the number of chirps of the snowy tree cricket. The outdoor temperature is about 40°F more than one fourth the number of chirps the cricket makes in one minute. What is a function rule that represents this situation?



Your Turn to Work it Out



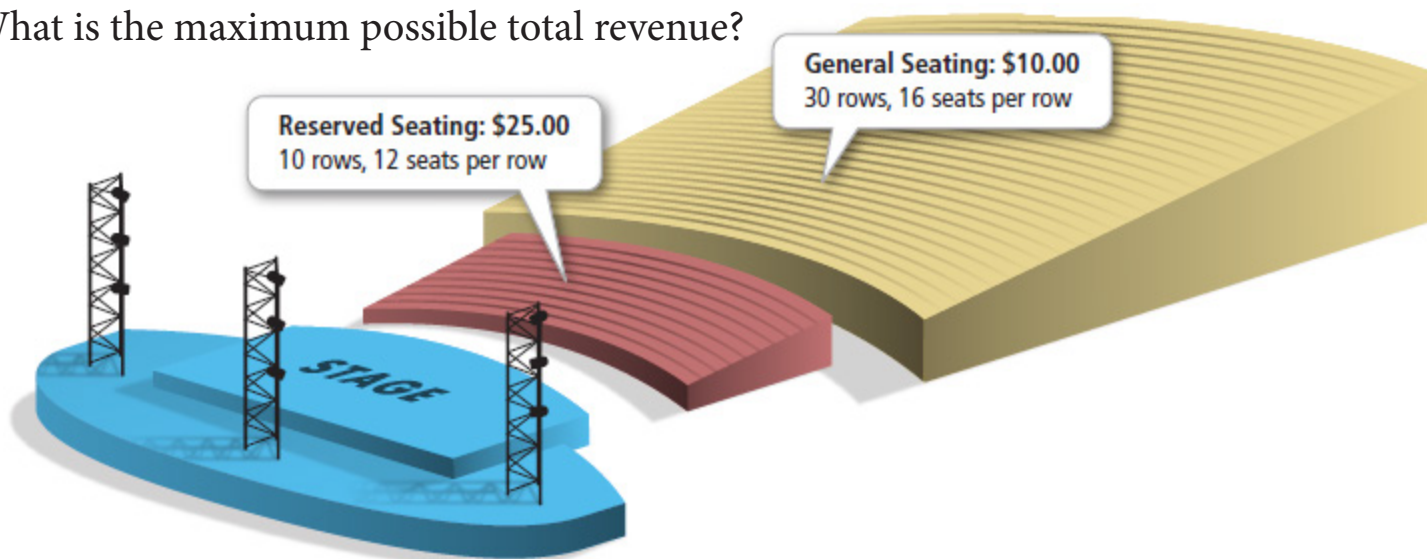
1. A landfill has 50,000 tons of waste in it. Each month it accumulates an average of 420 more tons of waste. What is a function rule that represents the total amount of waste after m months?

Example

#2 Writing and Evaluating a Function Rule



Concert Revenue A concert seating plan is shown below. Reserved seating is sold out. Total revenue from ticket sales will depend on the number of general-seating tickets sold. Write a function rule to represent this situation. What is the maximum possible total revenue?



Your Turn to Work it Out



2. A kennel charges \$15 per day to board dogs. Upon arrival, each dog must have a flea bath that costs \$12. Write a function rule for the total cost for n days of boarding plus a bath. How much does a 10-day stay cost?

Example

#3 Writing a Nonlinear Function Rule



Geometry Write a function rule for the area of a rectangle whose length is 5 ft more than its width. What is the area of the rectangle when its width is 9 ft?

Your Turn to Work it Out



3. Write a function rule for the area of a triangle whose height is 4 in. more than twice the length of its base. What is the area of the triangle when the length of its base is 16 in.?