



# Interpreting Functions

Let's interpret some functions.

## 4.1

### Worked Example: Function Notation

Use the equation  $f(x) = 3x - 5$  to find the value of  $f(9.2)$ .

Step 1:

$$f(9.2) = 3 \cdot 9.2 - 5$$

Step 2:

$$f(9.2) = 27.6 - 5$$

Step 3:

$$f(9.2) = 22.6$$



## 4.2

## It's Getting Hotter

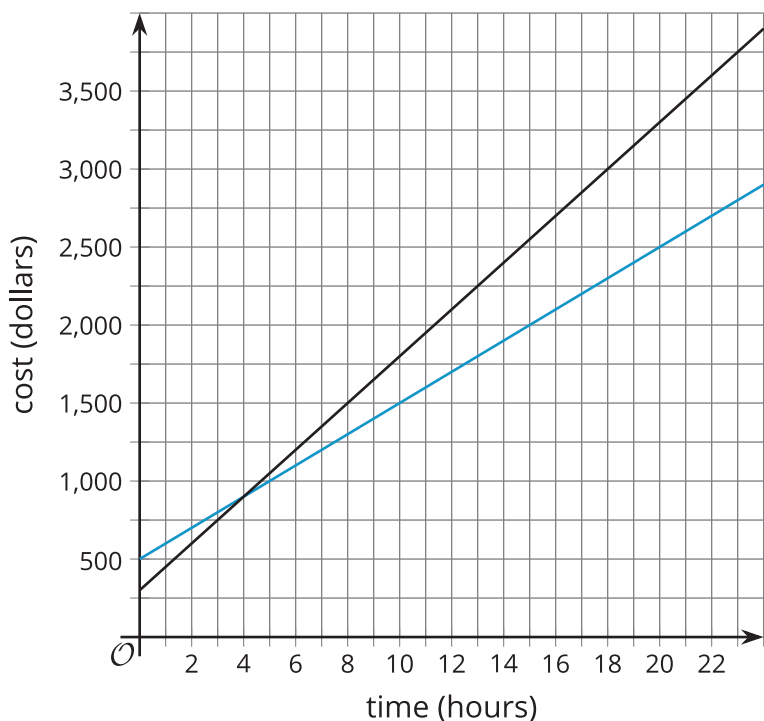


A machine in a laboratory is set to steadily increase the temperature inside. The temperature, in degrees Celsius, inside the machine after being turned on is a function of time, in seconds, given by the equation  $f(t) = 22 + 1.3t$ .

1. What does  $f(3)$  mean in this situation?
2. Find the value of  $f(3)$  and interpret that value.
3. What does the equation  $f(t) = 35$  mean in this situation?
4. Solve the equation to find the value of  $t$  for the previous question.
5. Write an equation involving  $f$  that represents each of these situations:
  - a. the temperature in the machine 30 seconds after it is turned on
  - b. the time when the temperature inside the machine is 100 degrees Celsius

## 4.3 You Charge How Much?

Two companies charge to rent time using their supercomputers. Their fees are given by the equations  $f(t) = 500 + 100t$  and  $g(t) = 300 + 150t$ . The lines  $y = f(t)$  and  $y = g(t)$  are graphed.



1. Which line represents  $y = f(t)$ ? Explain how you know.
2. The lines intersect at the point  $(4, 900)$ . What does this point mean in this situation?
3. Which is greater,  $f(10)$  or  $g(10)$ ? What does that mean in this situation?
4. Your group has \$1,500 to spend on supercomputer time. Which company should your group use?
  - a. Use the equations to explain or show your reasoning.
  - b. Use the graph to explain or show your reasoning.