

**SECTION 9A** **Ready To Go On? Problem Solving Intervention**  
**9-1 Multiple Representations of Functions**

Often functions can be represented in a variety of ways. Use the method that is easiest for you.

A hot air balloon is descending from an altitude of 1000 feet at a rate of 8 feet per second. Create a table, equation, and graph to represent the hot air balloon's altitude,  $a$ , with relation to time,  $t$ . When will it reach the ground?

**Understand the Problem**

1. Describe the hot air balloon's descent. \_\_\_\_\_  
 \_\_\_\_\_

**Make a Plan**

2. What do you need to determine? \_\_\_\_\_  
 \_\_\_\_\_

**Solve**

3. Create a table. Let  $t$  equal time and  $a$  equal altitude.

$t$ (seconds)	0	1	2	3	4
$a$ (feet)	1000	_____	_____	_____	_____

First differences: \_\_\_\_\_ -8 \_\_\_\_\_

The first differences are \_\_\_\_\_, so a \_\_\_\_\_ model is appropriate.

4. Write an equation to model: "Altitude is equal to 1000 minus \_\_\_\_\_ feet per second."

$$a = \text{_____} - \text{_____}$$

5. Graph the equation.

$a$ -intercept: \_\_\_\_\_

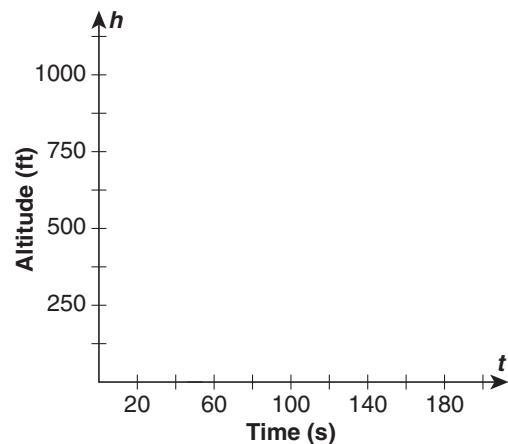
Solve the equation for  $t$  when  $a = 0$ :

$$0 = 1000 - \text{_____}$$

$$t = \text{_____}$$

$t$ -intercept: \_\_\_\_\_

6. The hot air balloon will reach the ground after \_\_\_\_\_ seconds.



**Look Back**

7. Check the intercepts by graphing the equation on your graphing calculator.