Vocabulary

- Function

- Function Notation

Examples

1. Given the graph of the line, complete the table. Then write an equation for the line.

<table>
<thead>
<tr>
<th>$x$</th>
<th>$f(x)$</th>
</tr>
</thead>
<tbody>
<tr>
<td>-2</td>
<td>2</td>
</tr>
<tr>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>1</td>
<td>-7</td>
</tr>
</tbody>
</table>

![Graph of the line](image-url)
2. Use the graph of the line in Figure 1 to answer the following questions.

![Figure 1: g(x)](image)

(a) Find \( g(-1) \)  
(b) Find \( g(0) \)  
(c) Solve \( g(x) = -7 \)

3. Write an equation for the line in Figure 1, then use your equation to find the horizontal (x) intercept.
4. Use the graph in Figure 2 to answer the following questions.

![Figure 2: h(x)](image)

(a) Find $h(0)$  
(b) Find $h(-1)$  
(c) Solve $h(x) = -4$  
(d) Solve $h(x) = 2$

5. Use the graph in Figure 3 to answer the following questions.

![Figure 3: j(x)](image)

(a) Find $j(1)$  
(b) Solve $j(x) = 0$  
(c) Estimate $j(x) = 6$
Word Problems

1. A motel charges $50 per night for a room. The total cost of a stay at the motel is a function of the number of nights stayed.
   (a) Write an equation to model this situation using function notation. Use ‘c’ for cost and ‘n’ for number of nights.

   (b) Use your equation to find c(13) and interpret your solution in terms of the situation.

   (c) Use your equation to solve c(n) = 1250 and interpret your solution in terms of the situation.

2. The speed in ft/s that an object falls is a function of time in seconds. The acceleration due to gravity of an object is 32 ft/sec².
   (a) Write an equation to model this situation using function notation. Use ‘s’ for speed and ‘t’ for time.

   (b) Use your equation to find s(1.5) and interpret your solution in terms of the situation.

   (c) Use your equation to solve s(t) = 72 and interpret your solution in terms of the situation.