

## Chapter 1 Review

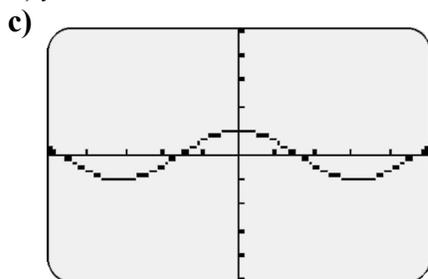
### 1.1 Identify Functions, pages 6–14

1. Is each relation a function? How do you know?

a)

$x$	$y$
-2	0
-1	0
0	1
1	1
2	2

b)  $y = x^2 + 3$



2. Evaluate, given  $f(x) = x^2 + 5x - 5$ .
- a)  $f(2)$     b)  $f(-3)$     c)  $f\left(\frac{1}{2}\right)$

### 1.2 Domain and Range, pages 15–22

3. Describe in words the domain and range of  $y = 3x + 1$ . Explain your thinking.
4. A parabola opens upward and its vertex is located at  $(-2, 5)$ . Write the domain and range.

### 1.3 Analyse Quadratic Functions, pages 23–30

5. Does each relation represent a quadratic function? If not, explain why.
- a)  $h(t) = 2(t + 2)^2 + 2$
- b)  $4x + 3y = 21$

6. Identify the relation for this set of data as linear, quadratic, or neither. Calculate the first and second differences, if necessary.

$x$	$y$
-2	-7
-1	-1
0	1
1	-1
2	-7

### 1.4 to 1.6 Stretches of Functions, Translations of Functions, Sketch Graphs Using Transformations, pages 31–53

7. For each function, describe the graph in terms of transformations on the graph of  $y = x^2$ . Then, sketch the graph. Label the vertex, axis of symmetry, and two other points.
- a)  $f(x) = -x^2 - 3$
- b)  $g(x) = 3(x - 4)^2$
- c)  $h(x) = -2(x + 1)^2 - 4$
8. Determine the equation of a parabola with vertex at  $(8, -2)$ , congruent in shape to the graph of  $y = 2x^2$ , and with no  $x$ -intercepts.
9. On the moon, the approximate height of an object above the ground,  $h$ , in metres,  $t$  seconds after being dropped from a height of 40 m is given by the function  $h(t) = -0.8t^2 + 40$ .
- a) Graph the function.
- b) Find the height of the object 2 s after being dropped.
- c) How long will the object take to hit the ground?