

Section 6.4 Extra Practice

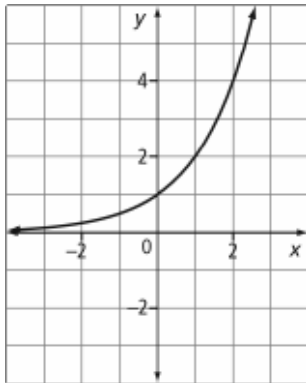
1. Determine whether each relation is a function or is not a function. Give reasons for your answer.

a) $(4, 1), (5, -2), (6, -5), (7, -8), (6, -11), (5, -14), (4, -17)$

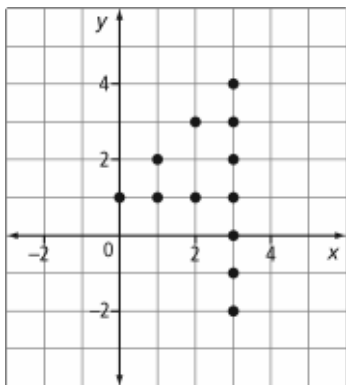
b)

| x | y |
|-----|-----|
| -2 | -2 |
| -1 | 4 |
| 0 | -8 |
| 1 | 16 |
| 2 | -32 |

c)



d)



2. The formula for the value of a \$500 investment at 6% interest, compounded annually, is $A = 500(1.06)^n$. Write this formula using function notation.

3. The cost of T-shirts for the basketball team is given by the function $C(n) = 50 + 9n$,

where n is the number of T-shirts and C is the cost, in dollars. Write this function as a formula with two variables.

4. If $f(x) = 3x + 7$, determine

a) $f\left(\frac{1}{3}\right)$ b) $f(-2)$ c) x if $f(x) = 34$

5. If $g(x) = \frac{1}{4}x + \frac{3}{4}$, determine

a) $g(5)$ b) $g(-3)$ c) x if $g(x) = -\frac{3}{2}$

6. Make a table of values and graph each function.

a) $f(x) = 2x - 7$ for the domain $\{-2, -1, 0, 1, 2, 3, 4\}$

b) $g(x) = \frac{1}{3}x + 1$ for the domain $\{-9, -6, -3, 0, 3, 6, 9\}$

7. The formula for the volume of a sphere is

$$f(r) = \frac{4}{3}\pi r^3. \text{ Determine}$$

a) $f(3)$ b) $f(10)$

c) $f\left(\frac{d}{2}\right)$ d) r if $f(r) = 6.28$

8. The function $C(n) = 25n$ describes the number of calories, C , in n crackers. Determine

a) $C(12)$ b) n when $C(n) = 475$

9. The height of a diver on a board can be described by the function $h(t) = 32 - 4.905t^2$, where h is the diver's height above the water, in metres, t seconds after jumping off the board.

- a) Determine the diver's height after 1.5 s.
 b) Estimate how long the diver is in the air.
 c) Determine an appropriate domain and range.