

1. Evaluate the following functions at the given values.

a. $G(x) = 3x - 1$

i. $G(3)$

ii. $G(-5)$

iii. $G(0)$

b. $h(t) = -2t^2 + 3t + 5$

i. $h(-3)$

ii. $h(4)$

iii. $h(0)$

c. $f(x) = -\frac{70}{x-7}$

i. $f(14)$

ii. $f(-5)$

iii. $f(7)$

d. $H(x) = \sqrt[3]{x}$

i. $H(-27)$

ii. $H\left(\frac{1}{64}\right)$

iii. $H(625)$

e. $g(x) = 15$

i. $G(15)$

ii. $G(-3)$

iii. $G(0)$

2. Solve the following equations using the given functions. State your conclusions using set notation as per the notation standards.

a. $h(x) = -8x - 5$

i. $h(x) = 19$

ii. $h(x) = 7$

b. $F(x) = x^2 + 3x - 25$

i. $F(x) = -7$

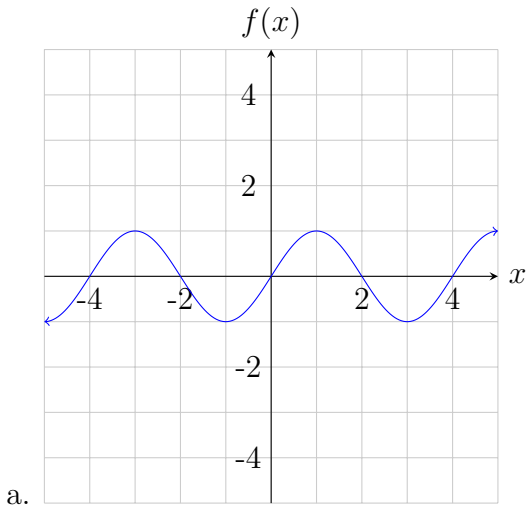
ii. $F(x) = 29$

3. Given $f(t) = t^2 + 2t - 35$:

a. Find $f(3)$.

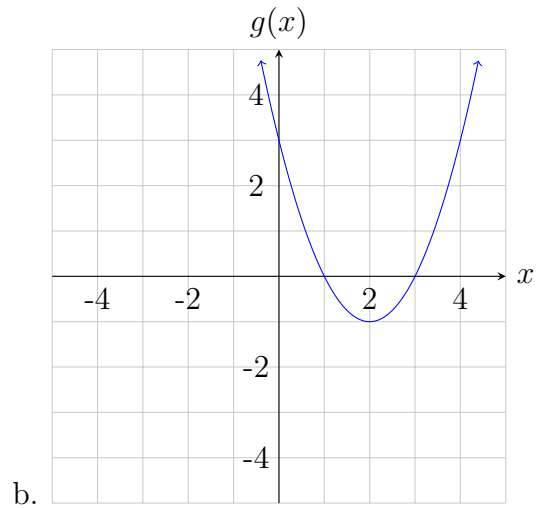
b. Solve $f(t) = 0$.

4. Use the given graphs to perform the evaluations.



i. $f(-4)$

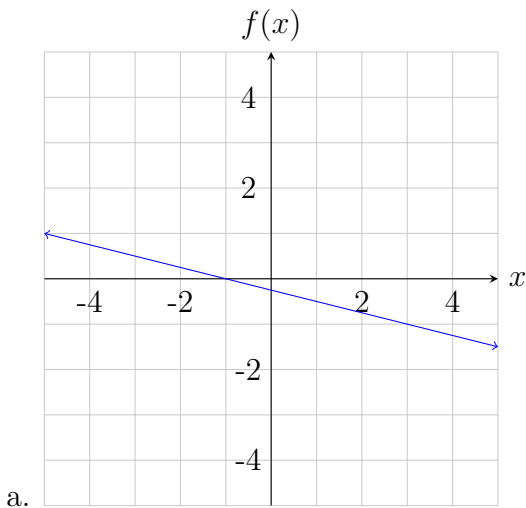
ii. $f(0)$



i. $g(2)$

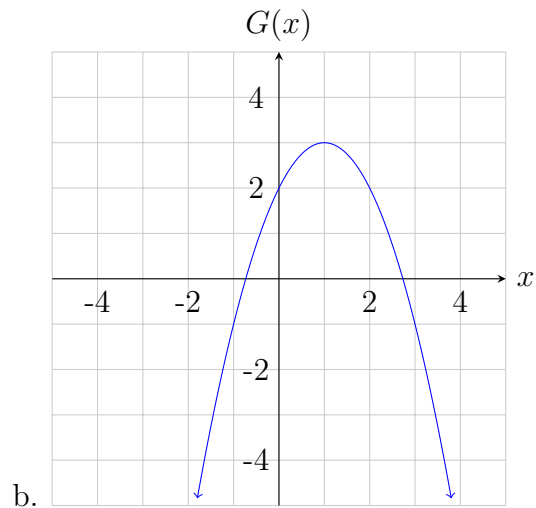
ii. $g(3)$

5. Use the given graphs to solve the equations.



i. $f(x) = 0$

ii. $f(x) = -0.5$



i. $G(x) = 2$

ii. $G(x) = -1$

6. Use the given tables to either evaluate or solve as indicated.

a.

x	-1	0	1	2	3
$h(x)$	2.8	9.1	0.1	-1.4	9.4

a. $h(2)$

b. $h(x) = 2.8$

b.

x	-3	-1	1	3	5
$k(x)$	1.5	2.6	-0.6	-3.7	5.1

a. $k(2)$

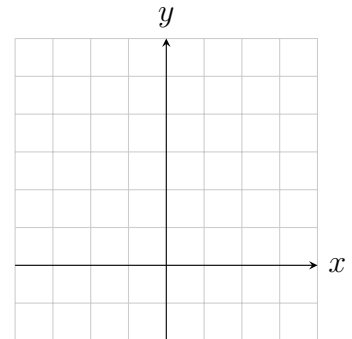
b. $k(x) = 2.8$

7. Suppose the function, H , squares the input, x , and then adds 1 to that in order to obtain the output.

a. Give a numeric description of H .

b. Give a symbolic description of H .

c. Give a visual description of H .

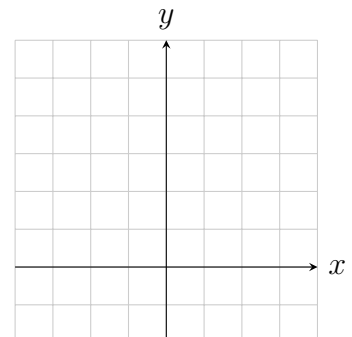


8. Suppose the function, h , has outputs which can be computed via the expression $h(x) = x^2 - 2x$.

a. Give a verbal description of h .

b. Give a numeric description of h .

c. Give a visual description of h .



9. An arcade sells multi-day passes. The function $g(x) = \frac{1}{3}x$ models the number of days a pass will work, where x is the amount of money paid, in dollars.

Interpret the meaning of $g(12) = 4$.

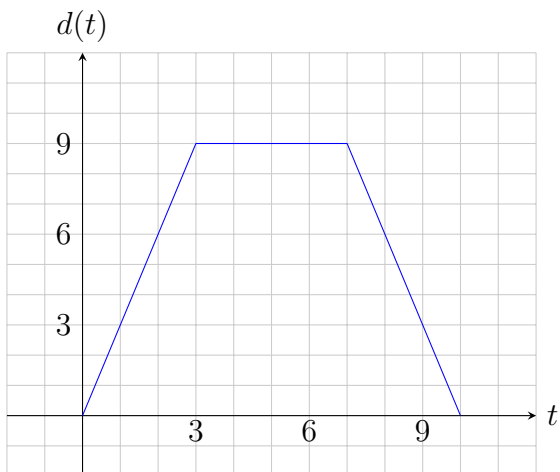
10. Suppose that f is the function that gives the total cost (in dollars) of downhill skiing x times during a season with a \$500 season pass. Write a formula for f .

11. Let $s(t) = 13t^2 + t + 100$, where s is the position (in miles) of a car driving on a straight road at time t (in hours). The car's velocity (in miles per hour) at time t is given by $v(t) = 26t + 1$.

- a. Using function notation, express the car's position after 3.4 hours. c. Use function notation to express the question, "When is the car going 58 miles per hour?"

- b. Where is the car 3.4 hours into its drive? d. Where is the car when it is going 27 miles per hour?

12. The following figure has the graph $y = d(t)$, which models a particle's distance from the starting line in feet, where t stands for time in seconds.



- a. Find $d(7)$ and interpret its meaning.

- b. Solve $d(t) = 6$ and interpret its meaning.