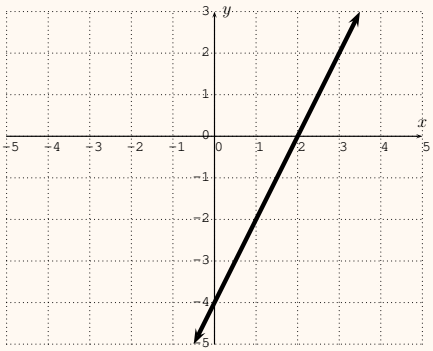
3.3 Exercises

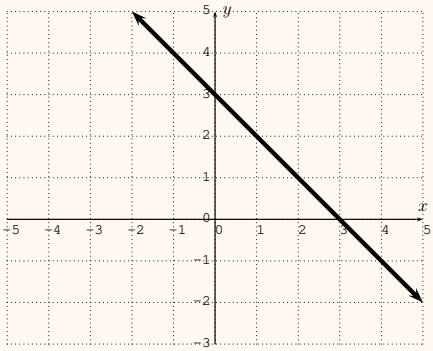
Exercise 3.1

Find the slope and y-intercept of the line with the given data. Using the slope and y-intercept, write the equation of the line in slope-intercept form.

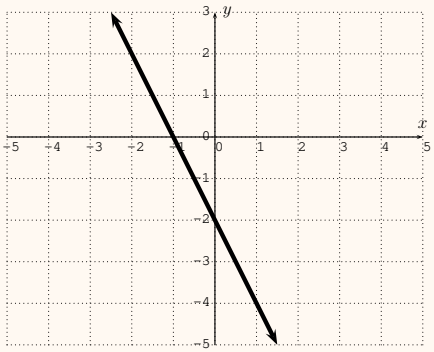
a)



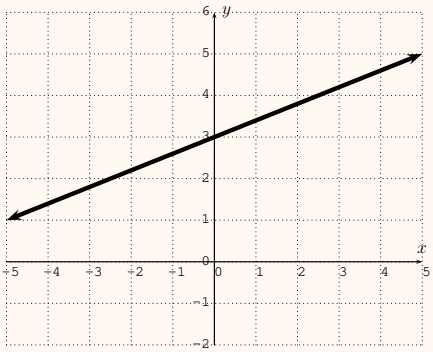
b)



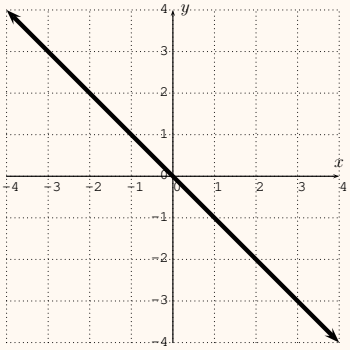
c)



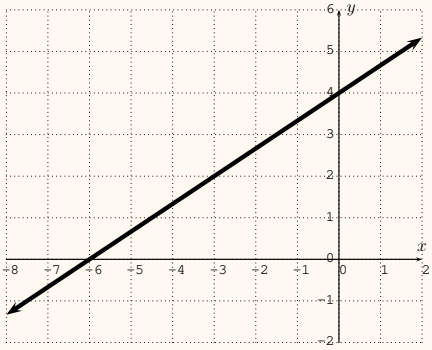
d)



e)



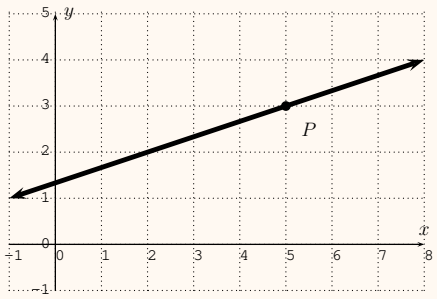
f)



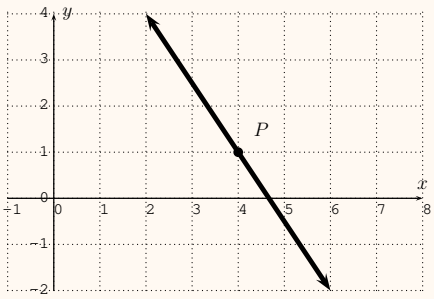
Exercise 3.2

Find the equation of the line in point-slope form (3.3) using the indicated point P.

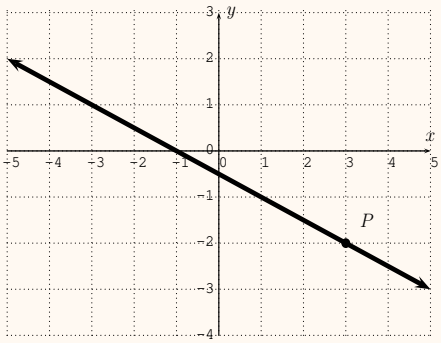
a)



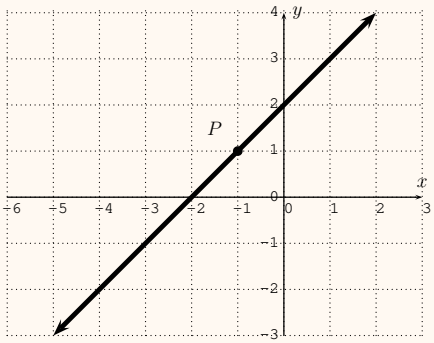
b)



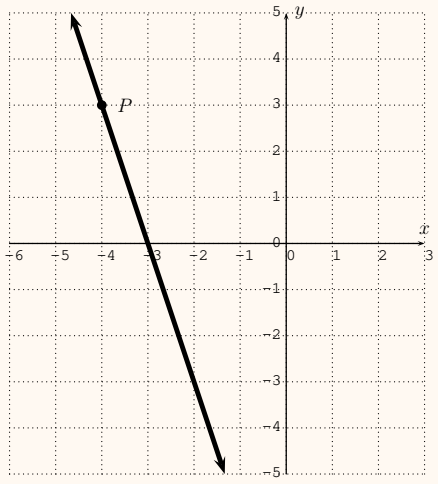
c)



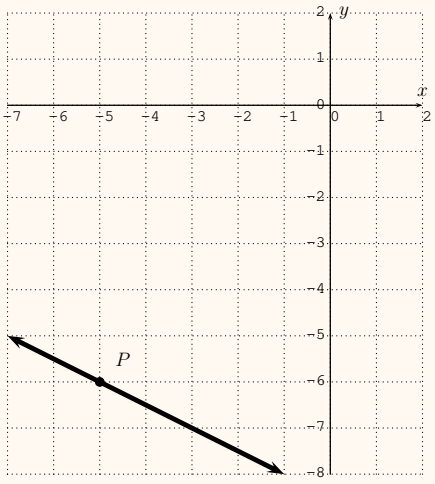
d)



e)



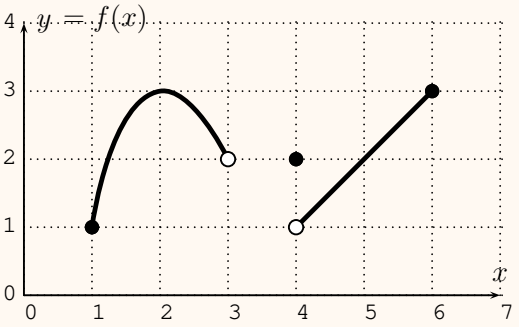
f)



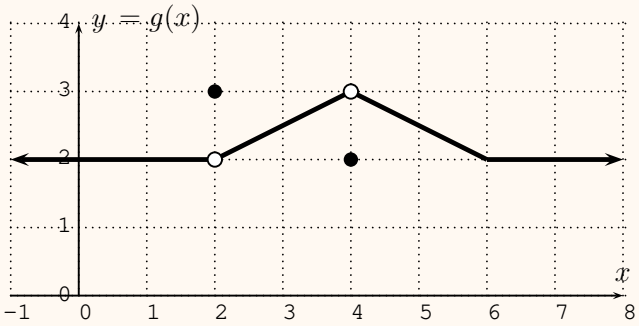
Exercise 3.3

Below are three graphs for the functions f, g, and h.

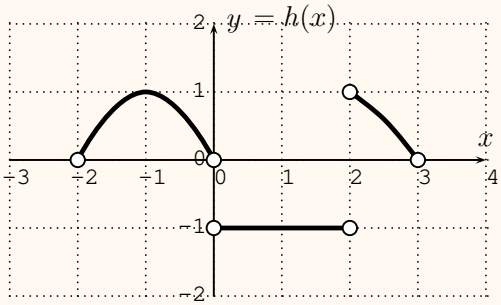
function f :



function g :



function h :



a) Find the domain and range of f.
b) Find the domain and range of g.
c) Find the domain and range of h.

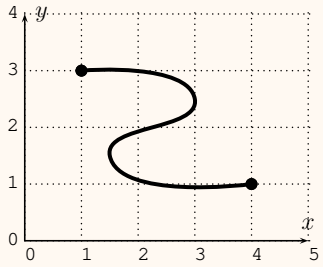
Find the following function values:

d) $f(1)$	e) $f(2)$	f) $f(3)$	g) $f(4)$	h) $f(5)$	i) $f(6)$	j) $f(7)$
k) $g(0)$	l) $g(1)$	m) $g(2)$	n) $g(3)$	o) $g(4)$	p) $g(6)$	q) $g(13.2)$
r) $h(-2)$	s) $h(-1)$	t) $h(0)$	u) $h(1)$	v) $h(2)$	w) $h(3)$	x) $h(\sqrt{2})$

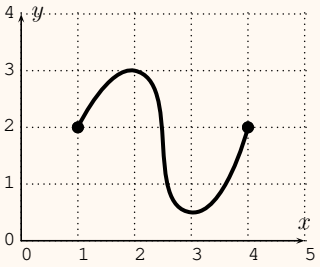
Exercise 3.4

Use the vertical line test to determine which of the following graphs are the graphs of functions.

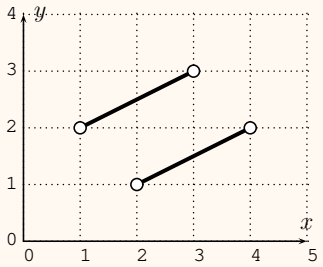
a)



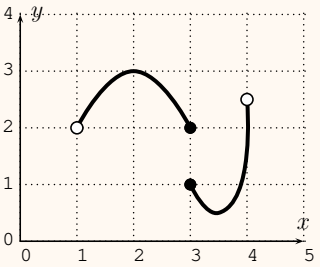
b)



c)

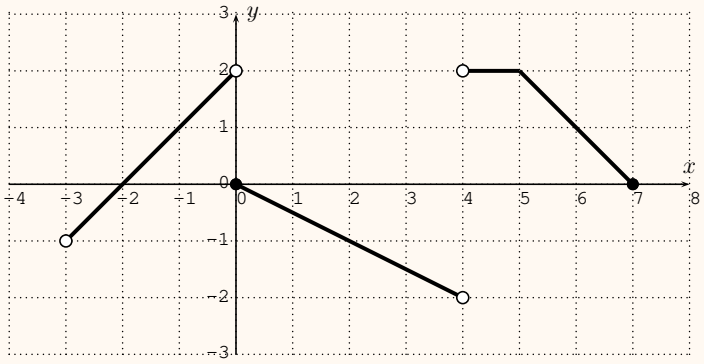


d)



Exercise 3.5

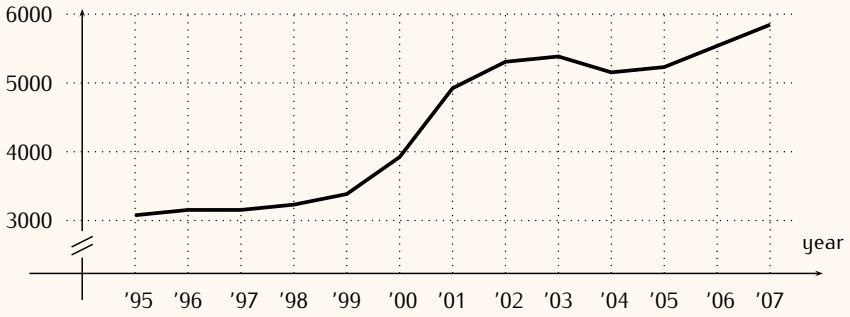
Let f be the function given by the following graph.



a) What is the domain of f?
b) What is the range of f?
c) For which x is $f(x) = 0$?
d) For which x is $f(x) = 2$?
e) For which x is $f(x) \leq 1$?
f) For which x is $f(x) > 0$?
g) Find $f(2)$ and $f(5)$.
h) Find $f(2) + f(5)$.
i) Find $f(2) + 5$.
j) Find $f(2 + 5)$.

Exercise 3.6

The graph below displays the number of students admitted to a college during the years 1995 to 2007.



a) How many students were admitted in the year 2000?
b) In what years were the most students admitted?
c) In what years did the number of admitted students rise fastest?
d) In what year(s) did the number of admitted students decline?

Exercise 3.7

Consider the function described by the following formula:

$$f(x) = \begin{cases} x^2 + 1 & \text{, for } -2 < x \leq 0 \\ x - 1 & \text{, for } 0 < x \leq 2 \\ -x + 4 & \text{, for } 2 < x \leq 5 \end{cases}$$

What is the domain of the function f? Graph the function f.