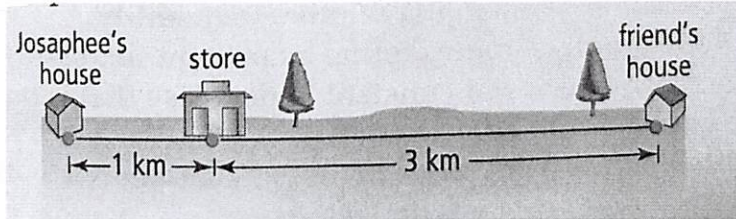


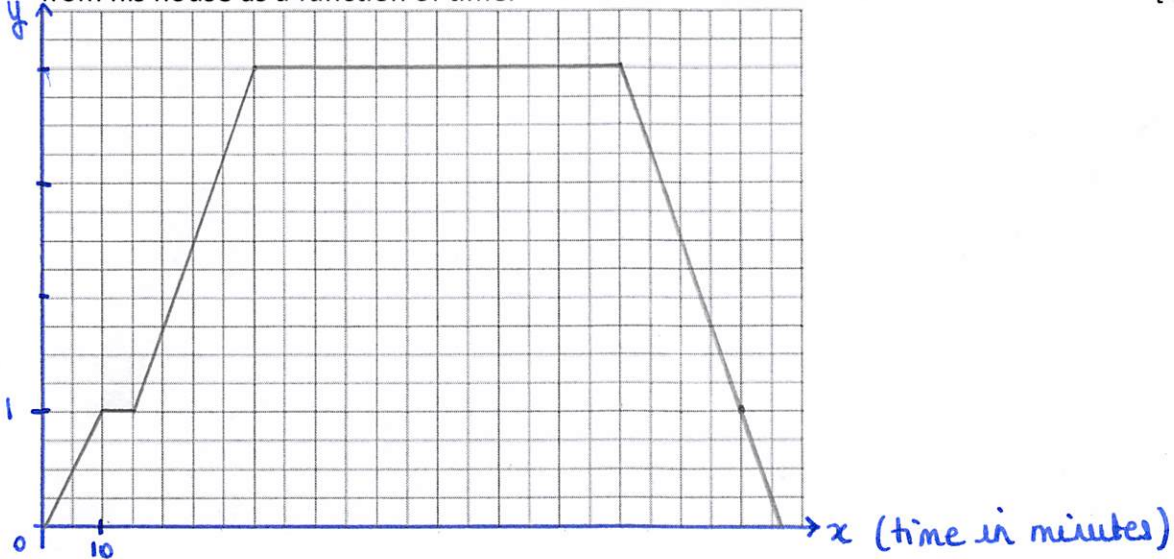
Chapter 5 TEST

1. Jose leaves his home and walks to the store. It takes him 10 minutes to reach the store. After buying a drink, he slowly jogs to his friend's house. It takes him 20 minutes. He visits with his friend for 1 hour and then runs directly home at the same speed as previously



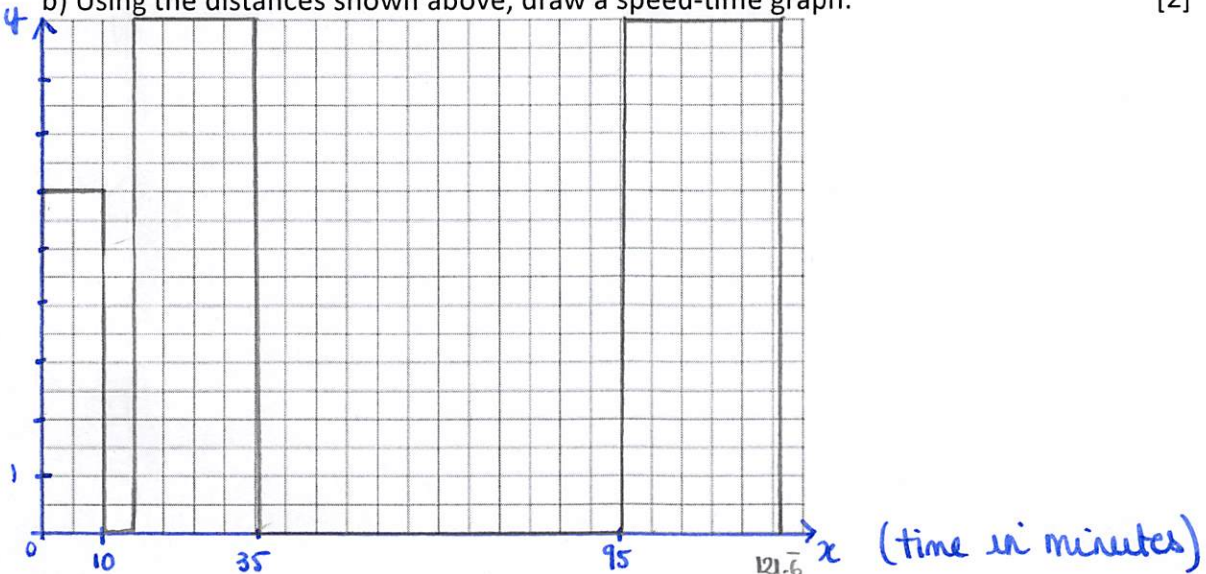
a) Using the distances shown above, draw a distance-time graph that shows Jose's distance from his house as a function of time. [2]

(distance in km)

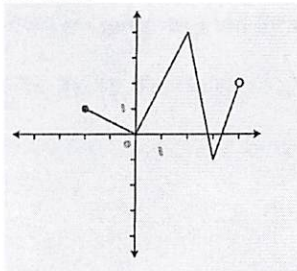


b) Using the distances shown above, draw a speed-time graph. [2]

(speed in km/h)



2. For the following graphs, determine the domain and Range and say if it represents a function or not.

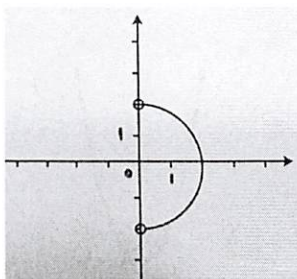


$$D = [-2; 4)$$

$$R = [-1, 4]$$

yes, it's a function

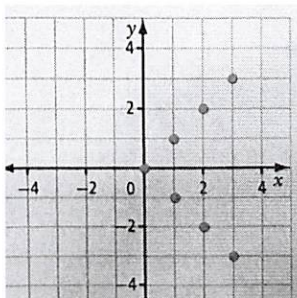
↑ [12]
Vertical line
test



$$D = (0, 2]$$

$$R = (-2, 2)$$

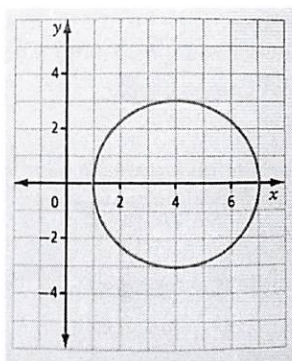
no, it's not a function



$$D = \{0, 1, 2, 3\}$$

$$R = \{-3, -2, -1, 0, 1, 2, 3\}$$

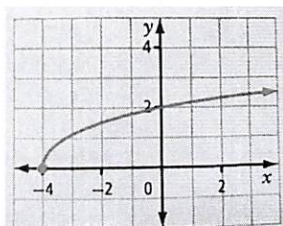
no, it's not a function



$$D = [1, 7]$$

$$R = [-3, 3]$$

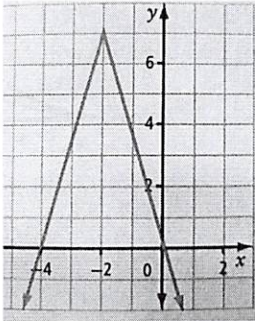
no, it's not a function



$$D = [-4, +\infty)$$

$$R = [0, +\infty)$$

yes, it's a function

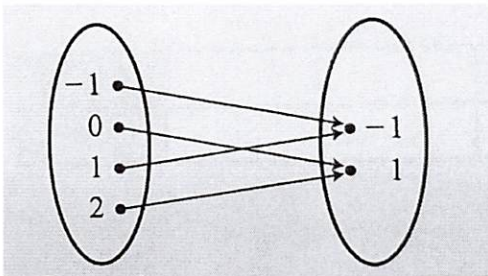


$$D = \mathbb{R}$$

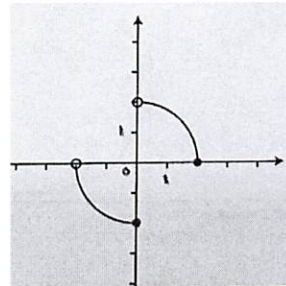
$$R = (-\infty, 7]$$

yes, it's a function

3. Are these following relations functions? No justification required. [2]

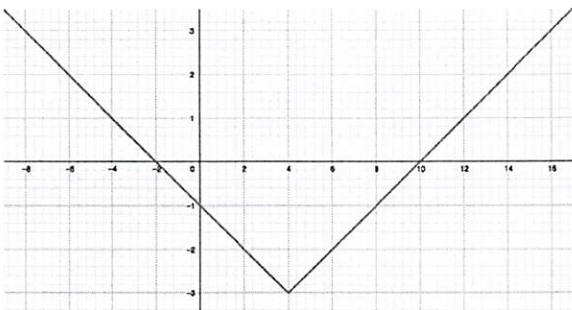


yes



yes

4. Consider the following graph of a function f . Determine the following values: [4]



$$f(-2) = 0$$

$$f(0) = -1$$

$$f(2) = -2$$

$$x \text{ such that } f(x) = 0 \quad x = -2 \text{ or } x = 10$$

$$x \text{ such that } f(x) = 2 \quad x = -6 \text{ or } x = 14$$

5. a) If you want to graph a relation, which variable (dependent or independent) do you put on the y-axis? [2]

dependent

- b) If you create a vertical table of values on which column do you put the values of the independent variable?

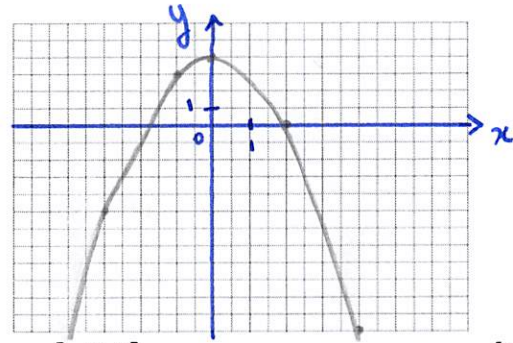
the column on the left (1st column)

- c) If there is a relation between a price paid and the number of guests invited, which one is the dependent variable?

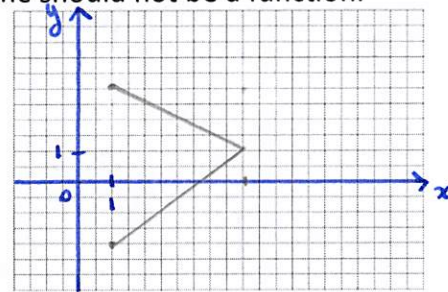
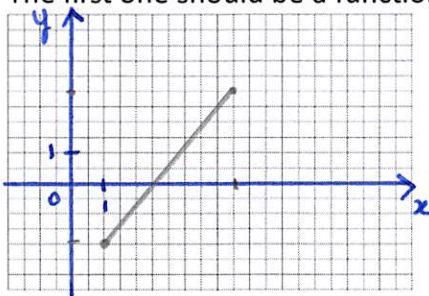
the price paid.

6. Fill the table of values for the following equation and graph your data. $y = -x^2 + 4$ [2]

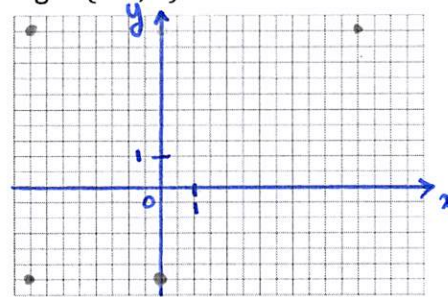
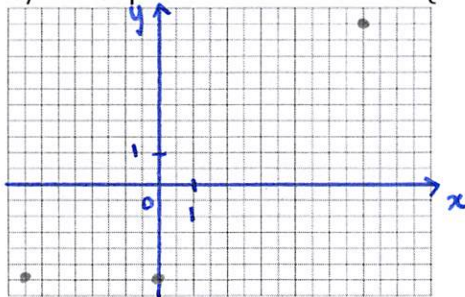
x	-3	-1	0	2	4
y	-5	3	4	0	-12



7. a) Graph 2 relations with domains $[0, 5]$ and Ranges $[-2, 3]$. [2]
The first one should be a function, and the 2nd one should not be a function.



- b) Same question with domains $\{-4, 0, 6\}$ and Ranges $\{-3, 5\}$ [2]



8. Consider the following function: $f(x) = -2x + 5$ [4]
Determine the following values (make sure you present your work properly):

a) $f(3) = -2(3) + 5 = -6 + 5 = \boxed{-1}$

b) $f(-3) = -2(-3) + 5 = 6 + 5 = \boxed{11}$

c) x such that $f(x) = -3$

$$-2x + 5 = -3$$

$$-2x = -8$$

$$\boxed{x = 4}$$

d) x such that $f(x) = 10$

$$-2x + 5 = 10$$

$$-2x = 5$$

$$\boxed{x = -\frac{5}{2}}$$