FUNCTIONS, THALES AND PYTHAGORAS TEST - 2° ESO
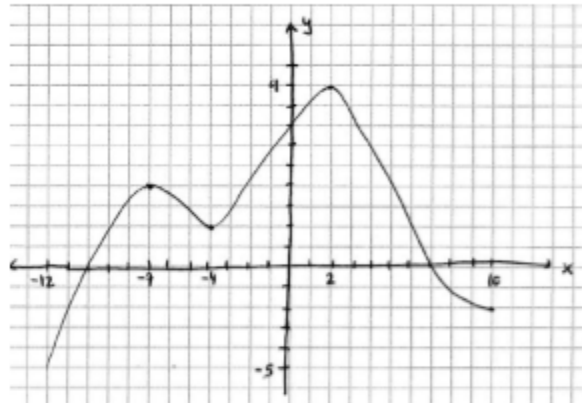
Exercise 1: (0.75 points) Plot a graph that doesn't represent a function, and one that it does.

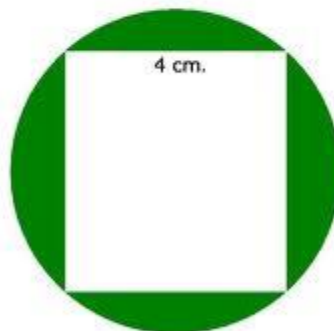**Exercise 2: (2.25 points)** Given the following graph of a certain function:

a) Indicate its domain and its image. Is it a continuous function? Why?
b) Determine the points where the function crosses the axes
c) Study its monotony
d) Study the extrema

Exercise 3: (1 point) Work out the graph of a function that fulfills all the following characteristics at the same time:
a) Its domain is $(-12,-5) \cup (-2,7)$
b) It crosses the axes at the points (-10,0), (7,0), and (0,8)
c) It has a minimum at x = - 8 and maxima at x = - 7 and x = 2

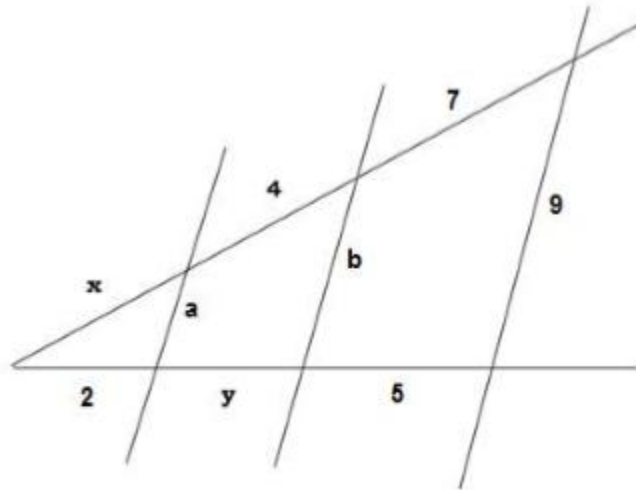**Exercise 4: (1 point)** Work out the value of the shadowed area

4 cm.

Exercise 5: (2.25 points) Plot the graphs of the following functions:
a) $y = \dfrac{x}{3} - 2$
b) $y = -4$
c) $y = x^2 + 2x$

Exercise 6: (1.75 points) Find the values of the indeterminates in the following figure

Exercise 7: (1 point) I want to find out the length of the shadow of a tower. Using a tree in order to help me with my task I got these measures. What are the values of the shadows?