



FUNCTIONS

3º ESO



Exercise 1: (0.5 ptos) Plot a graph that doesn't represent a function.

Exercise 2: (3.75 points)

- a) Find the equation of the straight line that goes through the point $A(-2, 7)$ if the value of its slope is 5 (0.5)
- b) Find the general equation of the straight line that goes through the points $P(3, -5)$ and $Q(-1, 6)$ (1.25)
- c) Find the equation of the straight line that goes through the points $P(7, 2)$ and $Q(7, -1)$ (0.5)
- d) Given the straight line $x - 4y + 5 = 0$ find the values of the slope and the y-intercept (0.75)
- e) Find the general equation of the straight line that's parallel to $4x - 5y - 2 = 0$ and goes through the point $P(-3, 4)$ (0.75)

Exercise 3: (3 ptos) Plot the graph of the following parabolas, indicating their curvature, finding the points where they cross the axes, the coordinates of the vertex and as many more points as you need:

- a) $f(x) = x^2 - 2x + 1$
- b) $f(x) = 9 - x^2$

Exercise 4: (2.75 points) Sketch the graph of the following piecewise function:

$$f(x) = \begin{cases} 5 & -7 < x \leq -2 \\ 3 - x & -2 < x < 2 \\ x^2 - 8x + 12 & x \geq 2 \end{cases}$$

