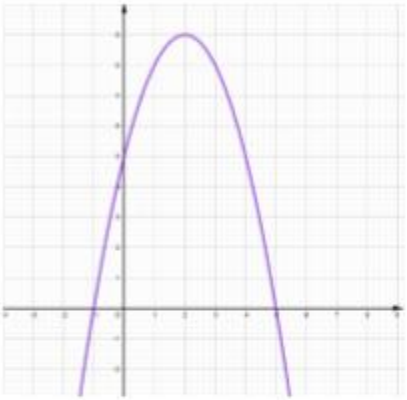
GEOMETRY AND FUNCTIONS TEST

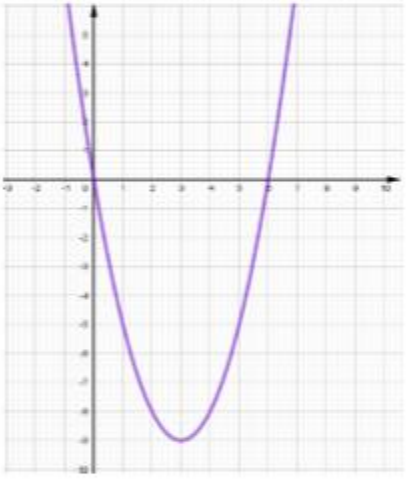
3º ESO

Exercise 1: (3 ptos) Plot the graph of the following functions, indicating its position, finding the points where it crosses the axes, the coordinates of the vertex and as many more points as you need

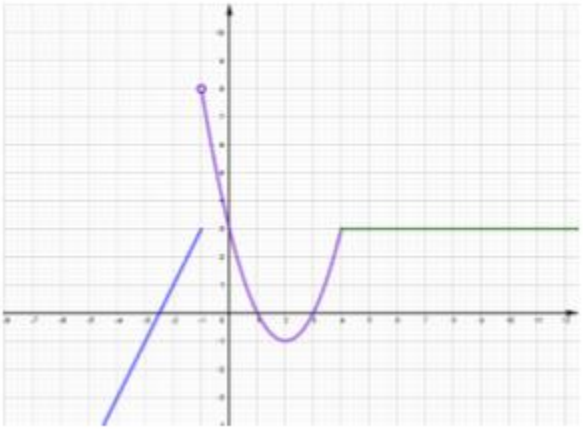
a) $y = -x^2 + 4x + 5$ (1.75)



b) $y = x^2 - 6x$ (1.25)



Exercise 2: (2.25 ptos) Plot graph of the function $f(x) = \begin{cases} 2x+5 & x \le -1 \\ x^2 - 4x + 3 & -1 < x < 4 \\ 3 & x \ge 4 \end{cases}$



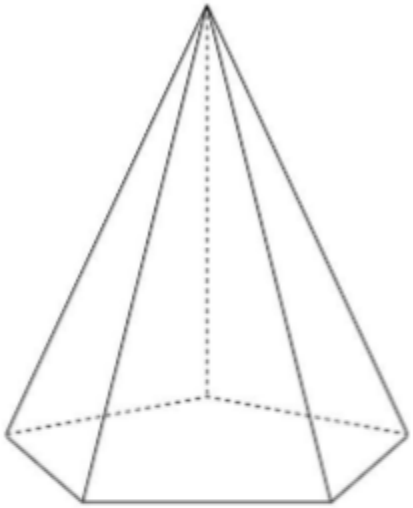
Exercise 3: (1.25 ptos) The axial diagonal of a cuboid has a length of 17 cm and the sides of the base measure 10 cm and 12 cm. Find its altitude

$h = 6.71$ cm

Exercise 4: (1.5 ptos) Find the sides of a right-angled triangle if they measure $x-5$, $x+9$ and the hypotenuse is given by $2x-4$ cm

The sides measure 26 cm, 24 cm and 10 cm

Exercise 5: (2 ptos) Find the area of a regular pentagonal pyramid if the side of the base measures 23.5 cm, the radius has a length of 20 cm and its altitude is 27 cm



$A = 2800.11$ cm^2

PS: I do hate geometry. I always did and I always will.