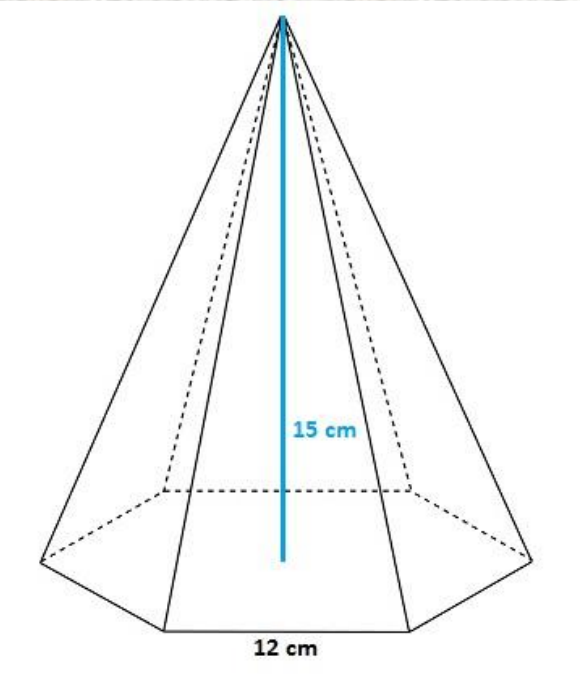
EXAMEN GLOBAL 3ª EVALUACIÓN - 3º ESO

Exercise 1: **(1.25 points)** In an arithmetic progression $a_9 = 57$ and $a_{32} = 172$. Find the general term and the sum of the first one hundred and thirty nine terms.

Exercise 2: **(1.25 points)** In a geometric progression $a_1 = 5$ and $a_{16} = -163840$. Find the general term and the sum of the first sixty terms.

Exercise 3: **(1.75 points)** Work out the area of this regular hexagonal pyramid



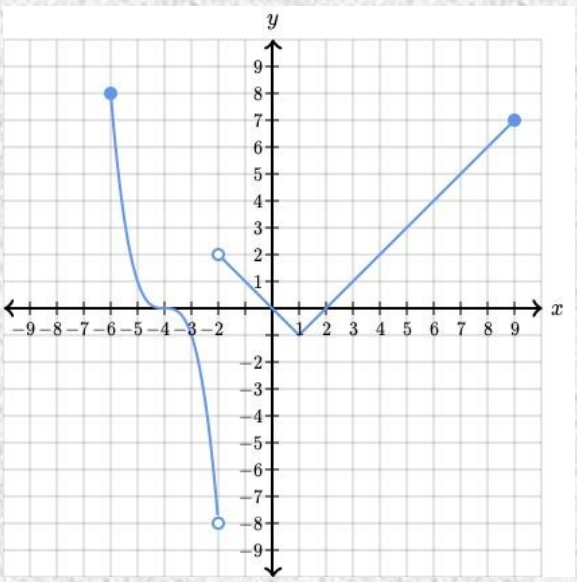
Exercise 4: **(1 points)** Work out the general equation of the straight line that passes through the points A(-4, -7) and B(4, 5), and the y-intercept.

Exercise 5: **(1.75 points)** Plot the graph of the piecewise function given below

$$f(x) = \begin{cases} 2x-1 & -3 < x < 1 \\ x^2 - 6x + 8 & 1 \le x < 5 \\ x-2 & x \ge 5 \end{cases}$$

Exercise 6: **(1.25 points)** Draw the graph of the function $f(x) = x^2 - 6x + 9$, indicating its direction, studying the points where it crosses the axes and finding the coordinates of the vertex. Construct also a table with at least a couple of values.

<u>Exercise 7:</u> (1.75 points) Given the following graph of a certain function:



a) Indicate its domain and its image
b) Determine the points where the function crosses the axes
c) Study its monotony
d) Study the local and global extrema