SERIES AND PYTHAGORAS' THEOREM TEST - 3º ESO

Exercise 1: (1 point) Find the general term in the following series:

a) $\{8, 6, 4.5, 3.375, 2.53125, \cdots\}$

b) $\left\{\frac{4}{3}, 1, \frac{16}{27}, \frac{25}{81}, \frac{36}{243}, \frac{49}{729} \cdots\right\}$

c) $\{-9, -5, -1, 3, 7 \cdots\}$

Exercise 2: (1 point) In an arithmetic progression we know that $a_3 = 4$ and $a_{12} = -32$.

a) Find the general term of the sequence

b) In which place can we find the term $a_n = -330$?

Exercise 3: (0.75 points) The first term of an arithmetic progression is 9 and the fifteenth term is 107. Find the sum of the first thirty five terms.

Exercise 4: (0.75 points) In a geometric progression we know that $a_7 = 256$ and $a_{12} = 8192$ Find the general term.

Exercise 5: (1 point) The first term of a geometric progression is 7 and the third is 0.28.

a) Find the sum of the first 98 terms

b) Find the sum of the first 200 terms

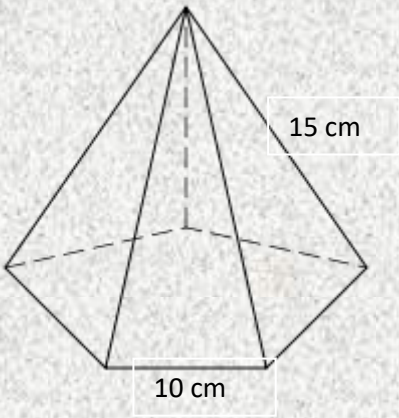
c) Can you jump to any conclusions?

Exercise 6: (0.5 points) Fibonacci's sequence is defined as follows:

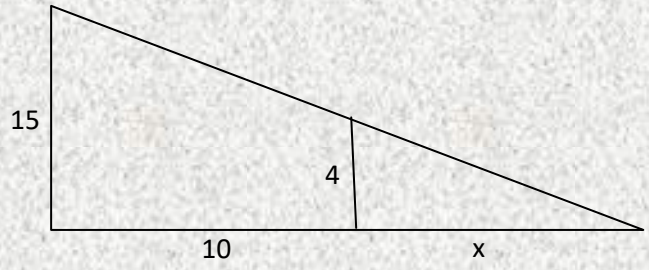
$$a_1 = 1 \quad ; \quad a_2 = 1 \quad ; \quad a_n = a_{n-1} + a_{n-2}$$

Write the first eight terms

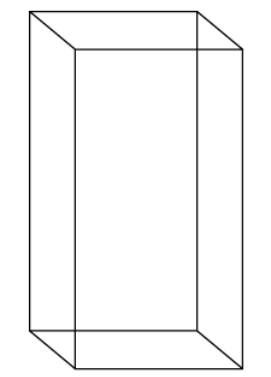
Exercise 7: (2 points) Work out the value of the area of a pentagonal pyramid with height 12cm if the length of the side of the base is 10cm and the edge is 15cm.



Exercise 8: (0.75 points) Work out the value of x in this figure:



Exercise 9: **(1.25 points)** The interior diagonal of a cuboid is 20 cm, and the sides of the base are 9 cm and 7 cm. Find its area.
Hint: Work out the value of the height first



Exercise 10: **(1 point)** Work out the value of the sides of this right-angled triangle