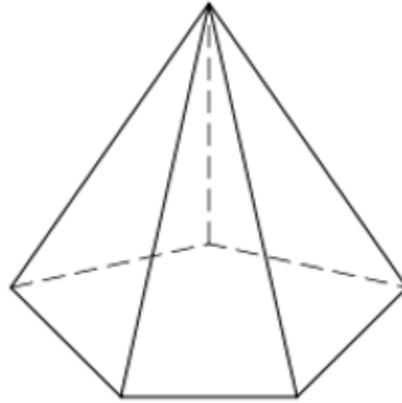
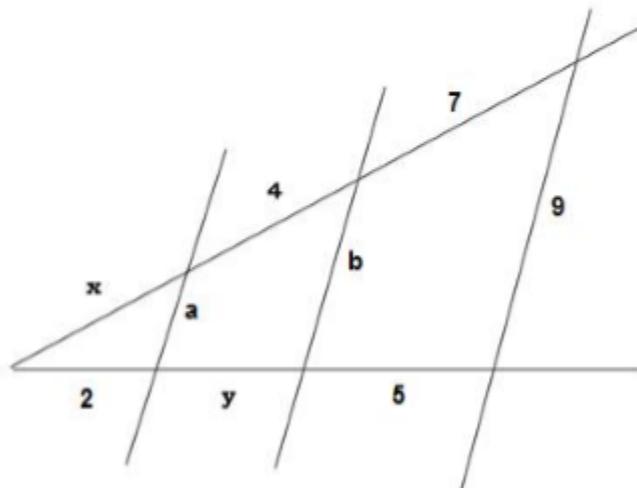


GEOMETRY - 4^o ESO

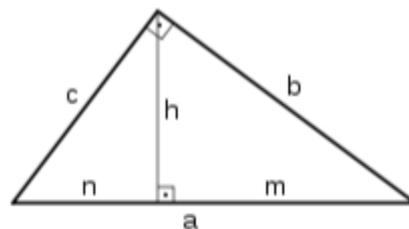
Exercise 1: (2 ptos) Work out the value of the area of a pentagonal pyramid with altitude 10 cm if the length of the side of the base is 7 cm and the length of its edge is 12 cm.



Exercise 2: (1 pto) Find the values of the indeterminates in the following figure



Exercise 3: (1 pto) Knowing that you are not allowed to use Pythagoras' theorem, find the value of all the indeterminates in the following triangle knowing that $a = 20$ cm and $c = 12$ cm. Indicate what theorem you are using in each step



Exercise 4: (1 pto) Given the vectors $\vec{u} = (3, 2)$, $\vec{v} = (\sqrt{3}, \sqrt{2})$, $\vec{w} = (4, -6)$ and $\vec{z} = (5, -1)$

- Find the magnitude of the vector \vec{v}
- Express \vec{w} as a linear combination of \vec{u} and \vec{z}
- Are \vec{u} and \vec{z} perpendicular vectors?
- Indicate the coordinates of the vector $\vec{u} + 3\vec{w} - 2\vec{z}$

Exercise 5: (1 pto)

- If $\vec{u} = (2, -1)$ and $\vec{v} = (3, 5)$ find a third vector \vec{w} so that $\vec{w} \cdot \vec{u} = 1$ and $\vec{w} \perp \vec{v}$
- Indicate a direction vector and a point of the straight line $3x - y + 4 = 0$

Exercise 6: (1.5 ptos) Given the straight line

$$r \equiv \begin{cases} 4 + 3t \\ 2t - 1 \end{cases}$$

- Find the general equation of a parallel line r' that passes through the point $A(-2, 5)$
- Find the general equation a perpendicular line r'' that passes through the point $B(-4, 1)$
- Find the point where r and r'' cross

Exercise 7: (1.5 ptos)

- Determine if the points $A(3, 6)$, $B(-3, 2)$ and $C(0, 4)$ are aligned. If the answer is *yes*, find the continuous equation of the straight line they belong to.
- Work out the coordinates of the symmetric point of $P(3, 1)$ with respect to $Q(-3, 7)$
- Find the value of k so that the point $R(k, -2)$ belongs to the straight line

$$r \equiv \begin{cases} 2 - 3t \\ -1 + 4t \end{cases}$$

Exercise 8: (1 pto) Los puntos $A(1, 1)$, $B(5, 4)$ y $C(5, -1)$ son los tres vértices de un triángulo.

- Calcula la altura del triángulo tomando como base el lado \overline{AC}
- Halla el perímetro y el área de dicho triángulo.