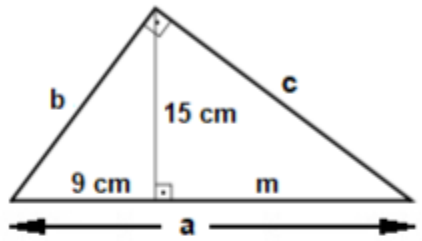
THIRD TERM GLOBAL TEST – 4º ESO

Exercise 1: (1 pto) Find the values of the sides of the triangle using the right triangle altitude theorems:



$m = 25$ cm

$a = 34$ cm

$b = 17.49$ cm

$c = 29.15$ cm

Exercise 2: (0.75 ptos) Find the axial diagonal of a cuboid if the sides have lengths of 10 cm, 12 cm and 15 cm $\boxed{D = 21.66 \text{ cm}}$

Exercise 3: (2.25 ptos)

a) Write $\vec{w} = (-1, -13)$ as a linear combination of $\vec{u} = (2, -3)$ and $\vec{v} = (5, 7)$

$\boxed{\vec{w} = 2\vec{u} - \vec{v}}$

b) Find the symmetric of the point $A(-7, 3)$ with respect to $P(1, -4)$ $\boxed{A'(9, -11)}$

c) Find the value of k so that the vectors $\vec{u} = (k+4, k-8)$ and $\vec{v} = (k+2, 7)$ are orthogonal

$\boxed{k = 3 \qquad k = -16}$

Exercise 4: (1.75 ptos) Given the straight line $r \equiv 7x - 5y - 4 = 0$

a) Write the continuous and parametric equations of r

$$\frac{x-2}{5} = \frac{y-2}{7} \rightarrow \left.\begin{array}{l} x = 2 + 5t \\ y = 2 + 7t \end{array}\right\}$$

b) Find the general equation of a straight line r' that's perpendicular to r and goes through the point $P(1, 7)$ $\boxed{5x + 7y - 54 = 0}$

Exercise 5: (1.5 ptos) Given two events A and B so that $P(A) = 0.4$, $P(\overline{B}) = 0.8$, $P(A \cup B) = 0.42$

a) $P(A \cap B) = 0.18$

b) $P(B/A) = 0.45$

c) Are A and B independent events? Why?

$P(A \cap B) = 0.18 \neq P(A) \cdot P(B) = 0.08 \rightarrow$ Nope

Exercise 6: (1.25 ptos) I get two cards without replacement from a Spanish deck of cards. Find the probability that:

a) I get two cup cards $3/52$

b) I get a seven and an ace $4/195$

c) I get at least a horse $5/26$

Exercise 7: (1.5 ptos) 13% of the jobs in Andalusia are related to tourism and 53% of them have an unlimited contract. 35% of the people working on some other activities have a temporary contract. Taken a random working person, find the probability that:

a) They have an unlimited contract 0.6344

b) They have a tourism-related job, knowing that they have a temporary contract 0.1671