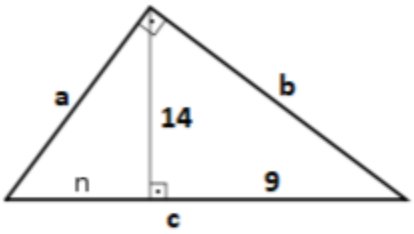
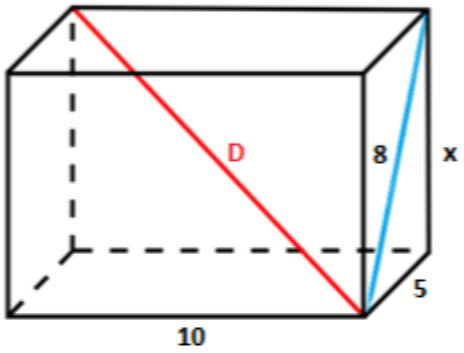
THIRD TERM GLOBAL TEST - 4º ESO

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



Exercise 2: (0.75 points) Find the value of the axial diagonal and the altitude of this cuboid:



Exercise 3: (2.25 points) Solve the following questions:

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

b) Find the value of the constant **k** so that the vectors $\vec{u}=(k+1,k-1)$ and $\vec{v}=(k-1,-7)$ are perpendicular

c) Find the symmetric of $P(2,-6)$ with respect to $A(5,4)$

Exercise 4: (1.5 points) Given the straight line $r \equiv \dfrac{x+2}{3}=\dfrac{y-1}{4}$

a) Write the parametric and the general equations of r

b) Find the length of the direction vector

c) Find the general equation a perpendicular line that passes through the point $B(-2,7)$

Exercise 5: (0.75 points) Find the continuous and general equations of the straight line that goes through the points $P(2,-3)$ and $B(5,7)$

Exercise 6: **(1.25 points)** Right now, because of the football world cup in Russia, there are many offers to buy a TV set. We know that 87% of the Spanish people will follow the competition. 23% of the ones who will watch the matches have bought a new TV set, but also 17% of the ones who are not interested on football. Taking a random person, find the probability that:

a) They haven't bought a new TV set

b) They are going to watch the matches on TV, given that they have bought a new TV set

Exercise 7: **(1.5 points)** I draw two cards from a Spanish deck of cards without replacement. Find the probability that:

a) I get two club cards

b) I don't get any aces

c) Both cards have the same number

d) I get at least one face card

Exercise 8: **(1 point)** Given two events A and B so that $P(A)=0.6$, $P(\overline{B})=0.3$, and $P(A\cup B)=0.88$, find:

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

b) $P(A/B)=$

c) Are the events mutually exclusive? Are they independent? Why?