

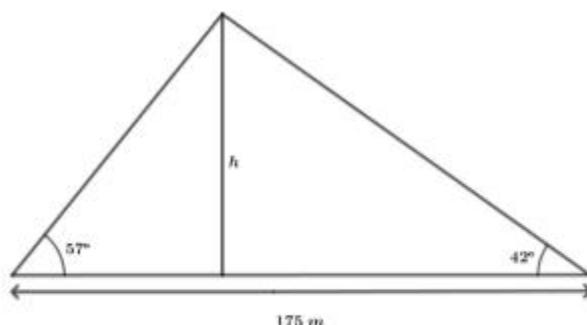


## TRIGONOMETRY AND ANALYTIC GEOMETRY



### TEST - 4º ESO

**Exercise 1: (1.5 ptos)** Find the value of  $h$  knowing that the base of the triangle measures 175 m and the angles are  $57^\circ$  and  $42^\circ$



**Exercise 2: (1.25 ptos)** If  $\sin \alpha = 0.72$  and  $\frac{\pi}{2} < \alpha < \pi$  find the values of  $\cos \alpha$ ,  $\tan \alpha$ , and the value of the angle  $\alpha$ . Round the answers to four decimal figures.

**Exercise 3: (1 pto)** Convert:

- a)  $\frac{29\pi}{15}$  rad into degrees  
b)  $\frac{10\pi}{12}$  rad into degrees  
c)  $225^\circ$  into radians  
d)  $210^\circ$  into radians

**Exercise 4: (1.25 ptos)** Find the three principal trigonometric functions of  $\alpha = \frac{4\pi}{3}$  rad without using a calculator

**Exercise 5: (1.25 ptos)** Given the points  $A(k, 6)$ ,  $B(7, 4)$  and  $C(6, k-1)$  find the value of  $k$  so that the triangle that they form has a right angle in  $B$

**Exercise 6: (1.25 ptos)** Prove that the triangle formed by the points  $A(4, 7)$ ,  $B(2, 3)$  and  $C(6, 1)$  is isosceles. Is it a right-angled triangle? Justify all of your answers.

**Exercise 7: (1.25 ptos)** Given the vectors  $\vec{u} = (3, -5)$ ,  $\vec{v} = (7, 8)$  and  $\vec{w} = (-1, 3)$  write  $\vec{v}$  as a linear combination of  $\vec{u}$  and  $\vec{w}$

**Exercise 8: (1.25 ptos)** Find the symmetric of the point  $A(5, -3)$  with respect to the point  $B(-6, 7)$

