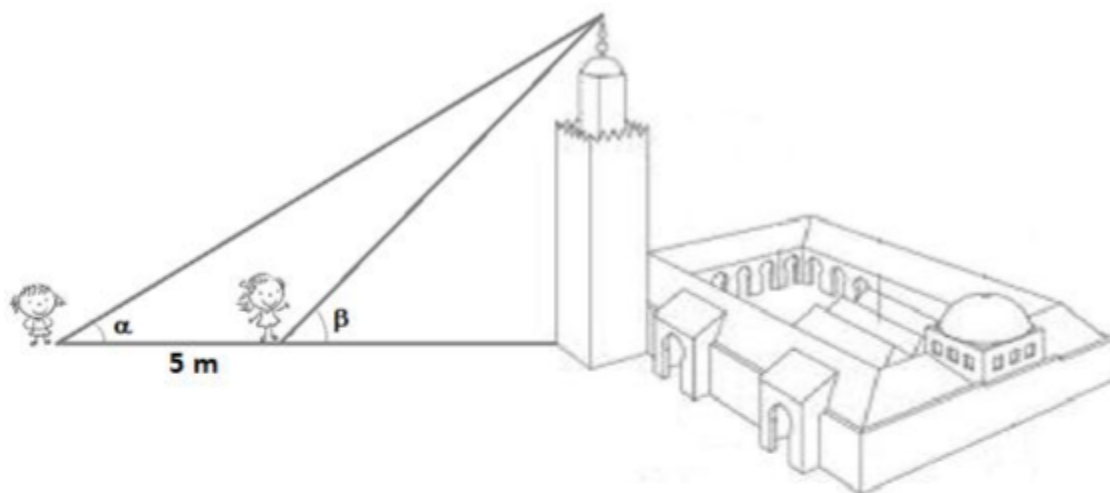


TRIGONOMETRY AND FUNCTIONS TEST - 4° ESO

Exercise 1: (1.5 ptos) Pam and Joan have borrowed a goniometer to measure the height of the tower of the Great Mosque of Córdoba. Knowing that they are standing 5 m away from each other, $\alpha = 74.48^\circ$ and $\beta = 79.51^\circ$, please, help them.



Exercise 2: (1.25 ptos) Find the three principal trigonometric functions (sine, cosine and tangent) of the angle $\frac{5\pi}{3}$, without using a calculator.

Exercise 3: (1.25 ptos) If $\sin \alpha = 0.85$ and $\frac{\pi}{2} < \alpha < \pi$ find the other five trigonometric functions and the value of the angle α

Exercise 4: (1 pto) The seagull that the kids from the second grade keep as a pet in the class has flown away to the top of a near tree. Knowing that the distance between the tree and the high school is of 7.5 m and the tree is 5.2 m high, find the distance the seagull had to fly, without using Pythagoras' theorem. PS: The seagull starts off from the ground floor.

Exercise 5: (2 ptos) Work out:

a) $\log_3 \frac{\sqrt{3} \sqrt[3]{81}}{\sqrt[6]{243}} =$

b) $\frac{\log_5 875 - \log_5 7}{\log_5 50 - \log_5 2} =$

c) $\frac{\log_7 4 + \log_7 16}{\log_7 160 - \log_7 5} =$



Exercise 6: (1.25 ptos) Find the height of the Statue of Liberty (without the pedestal) knowing that Sühan is standing 25 m away from its base, $\alpha = 61.99^\circ$ and $\beta = 74.95^\circ$



Exercise 7: (1.75 ptos) Sketch the graph of the piecewise function

$$f(x) = \begin{cases} \frac{1}{x+2} & -6 \leq x < -2 \\ 2^x & -1 \leq x < 2 \\ 8-2x & x > 2 \end{cases}$$

With a different color or a dashed line, plot the graph of $|f(x)|$

