

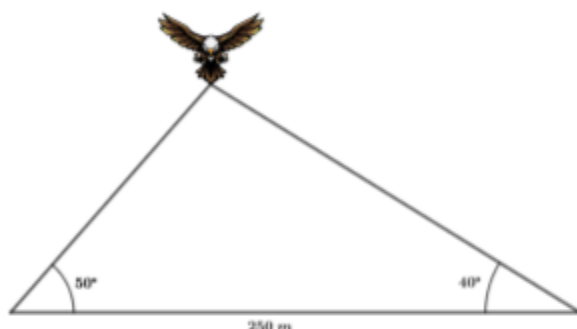


FUNCTIONS AND TRIGONOMETRY TEST

4° ESO



Exercise 1: (1.5 points) Find the height of the eagle knowing that the distance between both observation points is 250 m and the angles measure 40° and 50°



The eagle flies at a height of 123.1 m

Exercise 2: (1.5 points) If $\tan \alpha = 1.5$ find the values of the other five trigonometric functions and the value of angle α expressed in degrees, minutes and seconds

$$\cos \alpha = 0.5547$$

$$\sin \alpha = 0.8321$$

$$\cot \alpha = 0.6667$$

$$\sec \alpha = 1.8028$$

$$\csc \alpha = 1.2019$$

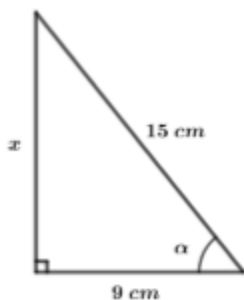
$$\alpha = 56^\circ 18' 36''$$

Exercise 3: (2.75 points)

a) (1.25) Find the area of a nonagon with sides of length 17 cm $A_N = 1786.55 \text{ cm}^2$

b) (1.5) Find the area and the perimeter of an isosceles triangle if the equal angles measure 65° and the length of the base is 20 cm $A_T = 214.45 \text{ cm}^2$ $P = 67.32 \text{ cm}$

Exercise 4: (0.75 points) Find the values of α and the missing side:

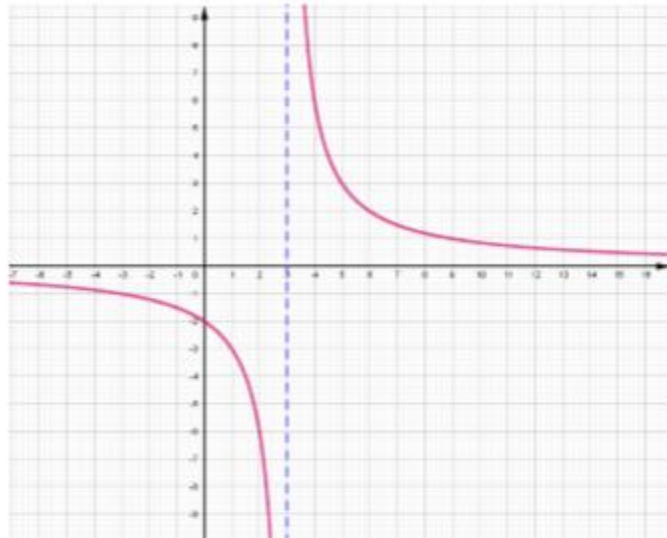


$$\alpha = 53^\circ 7' 48''$$

$$x = 12 \text{ cm}$$



Exercise 5: (1.25 points) Plot the graph of the function $f(x) = \frac{6}{x-3} \rightarrow \begin{cases} \text{HA} & y=0 \\ \text{VA} & x=3 \end{cases}$



Exercise 6: (2.25 points) Plot the piecewise function:

$$f(x) = \begin{cases} \frac{1}{x} & x < 0 \\ 2^x & 0 < x \leq 3 \\ 11-x & 3 < x < 11 \end{cases}$$

