MATHS TEST . Trigonometry 4° ESO _ 2011.
March 2011
Name:……N°:…….course:……..

1ª)

a) Find sin a and cos a, knowing that a is an acute angle and tg *a* = 0,4, . (Don't find a using your calculator)

b) Given that $\frac{\pi}{2} \leq \alpha \leq \pi$ and sinα = 5/13 ,find cos α and tan α (Don't find α using your calculator)

c) Use a unit circle to find $\sin\frac{3\pi}{4}$ and $\cos\frac{5\pi}{3}$. Don't find the trigonometric ratios with your calculator.

2ª) A little boy is flying a kite. The string of the kite makes an angle of 60° with the ground. If the height of the kite is *h* = 12 m, find the length (in meters) of the string that the boy has used.

3) a) Simplify the trigonometric expression:

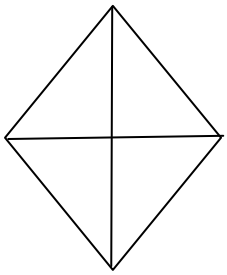
$$(\sin x + \cos x)(\sin x - \cos x) + 2\cos^2 x$$

b) Prove the identity:

$$(tan^2\, x + 1)(cos^2\, x - 1) = -tan^2 x$$

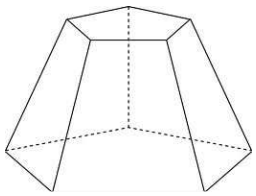
4) If sin 25º = 0.42, cos 25º = 0.91 and tan 25º = 0.47, find the trigonometric ratios of 155º and 205º, without using your calculator. Make a unit circle drawing if you need it.

5) Find the side and the angles of a rhombus if the lengths of its diagonals are 10 and 14 cm.



6) Two men on opposite sides of a TV tower of height 28 m notice the angle of elevation of the top of this tower to be 60° and 35° respectively. Find the distance (in meters) between the two men.

7) Find the volume of a pentagonal pyramid frustum with a bottom base of side 7 m, a top base of side 5 m and a height of 9 m.



1a	1b	1c	2	3a	3b	4	5	6	7
0.5	0,5	0,5	1	0,75	0,75	1	1,5	1,5	2