MATHS TEST . Inequations. Trigonometry. Frusta. Functions 4° ESO _ 2014.
March 31st. 2nd term. Resit exam

Name:……N°:……course:……..

1) Solve:

a) $\frac{2x^2}{3} - x < \frac{8x}{3}(1+x) + 1$

b) $\frac{x(x-4)}{x^2+4} \leq 0$

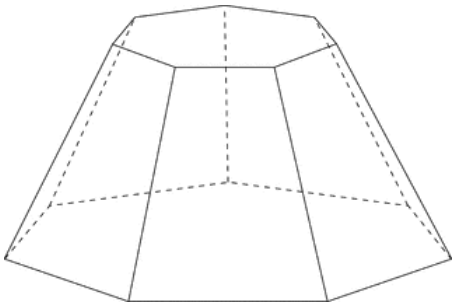
2) Given that $\pi/2 \leq \alpha \leq \pi$ and $\tan \alpha = -0,3$, find sin α and cos α (Don't find α using your calculator)

3)

A ladder leans against a building. The top of the ladder reaches a point on the building which is 18 feet above the ground. The foot of the ladder is 7 feet from the building. Find the measure of the angle which the ladder makes with the level ground.

4) Two men on the same side of a tall building notice the angle of elevation to the top of the building to be 30° and 60° respectively. If the height of the building is known to be h =120 m, find the distance (in meters) between the two men.

5) Find the volume of a heptagonal pyramid frustum with a bottom base of side 10 m, a top base of side 8 m and a height of 4 m.



6) Find the domain of the following functions:

a) $f(x) = \frac{3}{5}x^3 - 2x^2 + 5x - 1$

b) $f(x) = \frac{(x-1)(x+2)}{2x^2 - 5x}$

c) $f(x) = \frac{x-7}{(x+3)(x+2)}$

7) If $f(x) = 3x^2 - 2x + 1$ and $g(x) = 2x - 5$

a) find *f(g(x))*

b) find *g(f(x))*

c) find *f(f(x))*

1	2	3	4	5	6	7
1,5	1,5	1	2	2	0,75	0,5-0,25-0,5

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