IGCSE Revision 4

All things trigonometric…and triangly

1. The triangle RST has a right angle at S. If $RS = 4$ and $ST = 7$, find angle $S\hat{R}T$.
2. The triangle DEF has a right angle at D. If $FD = 7$ and $EFD = 21$, find FE.
3. The triangle BUM has a right angle at U. If $BM = 10$ and $BMU = 51$, find BU.
4. The triangle ABC has $AB = 4$ and $AC = 5$ and $BAC = 22°$. Find its area to five significant figures.
5. Solve the equation $10 \sin\theta + 1 = 3$ in the range $-360 < \theta < 360$.
6. The triangle XYZ has $XY = 5$, $YXZ = 70$ and $YZX = 40$.
   (a) Find length YZ.
   (b) Find the area of the triangle (giving all the decimal places on your calculator (remember; don't round too early!))
7. Triangle PQR has $PQR = 41$, $PQ = 7$ and $QR = 11$. Find the length PR to four decimal places.
8. Solve $2\cos x - \frac{2}{3} = \frac{4}{5}$ in the range $0 < x < 720$.
9. Triangle ABC has $AB = 3$, $BC = 10$ and $AC = 11$.
   (a) Find angle BAC.
   (b) Find angle BCA.
10. Mr Sood is on level ground some way away from a vertical cliff. You may assume he is a point only, with no height, and that his eyes are at the same level as the ground. The angle of elevation from him to the top of the cliff is 50°. When he moves 10 metres further away from the base of the cliff, the angle of elevation to the top of the cliff becomes 49°. At the end how far (in a straight line) is Neel from the top of the cliff?
11. Three ships (A, B and C) are enjoying themselves in the Atlantic (well, not the ships, but the passengers on the ships). The bearing of A from B is 220°. The bearing of B from C is 330°. The distance from A to B is 50km and the distance from B to C is 70km. Find
    (a) the distance from A to C,
    (b) the bearing of C from A.

A little bit of algebra…you love it!

12. Solve $\dfrac{x}{2} + \dfrac{2x-1}{3} - \dfrac{3-x}{4} = 2$
13. Simplify $\dfrac{12x^2 - 14x - 6}{4x^2 - 9}$. [Don't forget the three rules of factorisation!]
14. Solve $\dfrac{6}{x-5} + \dfrac{15}{x-4} = 8$.