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 $\dfrac{6}{x - 5} + \dfrac{15}{x - 4} = 8$.