

## D Summer 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  $EF = 21$ , find  $FE$ .
3. The triangle  $BUM$  has a right angle at  $U$ . If  $BM = 10$  and  $\angle BMU = 51^\circ$ , find  $BU$ .
4. The triangle  $ABC$  has  $AB = 4$  and  $AC = 5$  and  $\angle BAC = 22^\circ$ . 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  $XY = 5$ ,  $\angle YXZ = 70^\circ$  and  $\angle YZX = 40^\circ$ .
  - (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  $\angle PQR = 41^\circ$ ,  $PQ = 7$  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  $50^\circ$ . When he moves 10 metres further away from the base of the cliff, the angle of elevation to the top of the cliff becomes  $49^\circ$ . 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  $220^\circ$ . The bearing of  $B$  from  $C$  is  $330^\circ$ . 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  $\frac{x}{2} + \frac{2x-1}{3} - \frac{3-x}{4} = 2$
13. Simplify  $\frac{12x^2 - 14x - 6}{4x^2 - 9}$ . [Don't forget the three rules of factorisation!]
14. Solve  $\frac{6}{x-5} + \frac{15}{x-4} = 8$ .