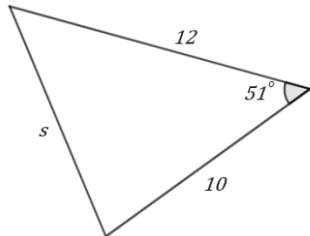
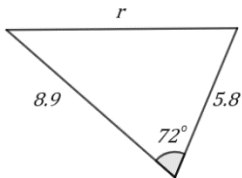
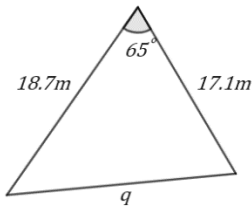
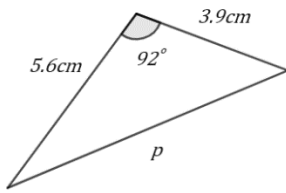
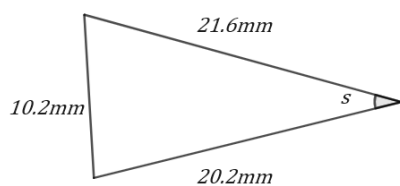
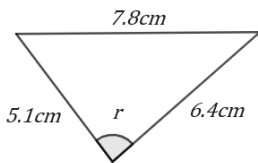
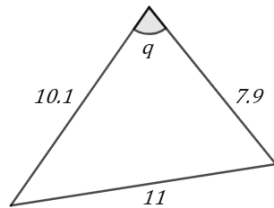
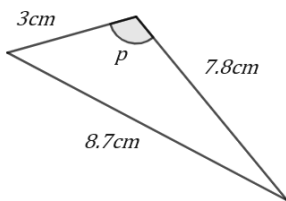


**Cosine Rule Only – www.m4ths.com – Steve B!**

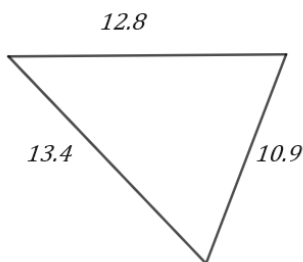
(1) Use the Cosine Rule to find the lengths  $p, q, r$  and  $s$  in the triangles below. Give answers to 3SF.



(2) Use the Cosine Rule to find the lengths  $p, q, r$  and  $s$  in the triangles below. Give answers to 1dp.



(3) Use the Cosine Rule to find the size of the largest angle in the triangle below.

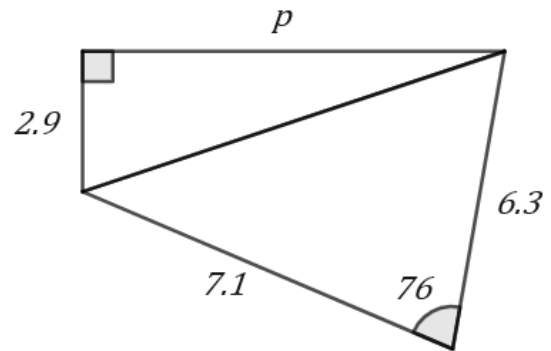


(4) In  $\triangle ABC$ ,  $\angle ABC = 64^\circ$ ,  $AB = 27.6\text{cm}$  and  $BC = 18.5\text{cm}$ . Find the perimeter of  $\triangle ABC$  to 3SF.

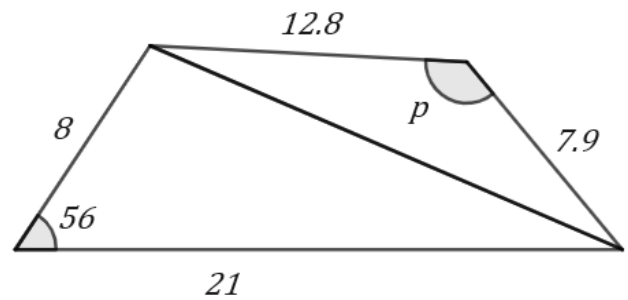
(5) In  $\triangle DEF$ ,  $DE = 11$ ,  $DF = 10$  and  $EF = 8$ . Find the size of  $\angle DEF$  to 1dp.

(6) A triangle has side lengths in the ratio 3: 5: 6. Find the size of the smallest angle in the triangle.

(7) Find the value of  $p$  in the diagram below.

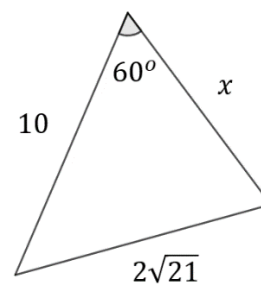


(8) Find the value of  $p$  in the diagram below.



(9) Fred walks in a straight line from his home on a bearing of  $042^\circ$  for 6 miles. He then stops and walks 4 miles in a straight line on a bearing of  $132^\circ$  before stopping again. Finally, he returns directly home. Find the total distance he walks.

(10) The triangle below has side lengths 10,  $2\sqrt{21}$  and  $x$ . The angle shown is  $60^\circ$ .



(a) Use the Cosine Rule to show that  $x$  satisfies the equation  $x^2 - 10x + 16 = 0$

(b) Hence find the value of  $x$ .

(c) Find the size of the largest angle in the triangle.

(11) The regular pentagon  $ABCDE$  has perimeter 35.4. Find the length  $CE$  to 3 SF.

(12)  $\triangle ABC$  is an equilateral triangle. Find the exact value of  $\cos \angle CAB$