

# National 5: Pythagoras' Theorem

## Section A: 3D Pythagoras

Calculate the length of the space diagonal of each cuboid.

- Q1** Length 6 cm, width 3 cm, height 2 cm  
**Q2** Length 6 mm, width 2 mm, height 9 mm  
**Q3** Length 14 m, width 5 m, height 2 m  
**Q4** Length 8 cm, width 7 cm, height 6 cm (to 1 decimal place)  
**Q5** Length 7.5 mm, width 6.4 mm, height 3.7 mm (to 2 decimal places)

## Section B: Converse of Pythagoras

Work out whether or not each of the following triangles is right-angled. Justify each answer.

- Q6** Lengths 12 cm, 5 cm and 13 cm  
**Q7** Lengths 45 mm, 28 mm and 53 mm  
**Q8** Lengths 10 cm, 10 cm and 14 cm  
**Q9** Lengths 2 m, 1.5 m and 2.5 m  
**Q10** Lengths 16 cm, 62 cm and 65 cm

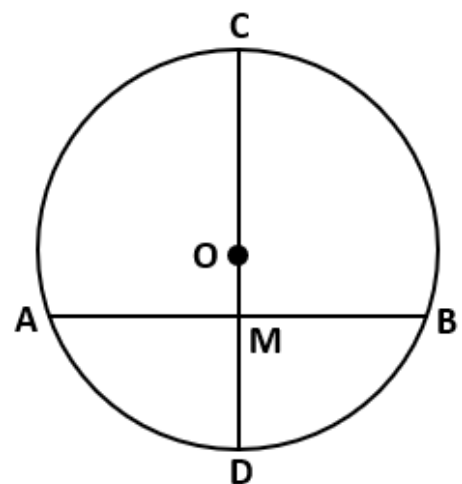
## Section C: Pythagoras in Circles

The following questions refer to the diagram of the circle to the right, which has not been drawn to scale.

O is the centre of the circle.

AB is a chord with mid-point M.

CD is a diameter.



- Q11** Radius = 5 cm. AB = 8 cm. Find MD.  
**Q12** MB = 4 cm. CD = 10 cm. Find OM.  
**Q13** MD = 8 cm. OC = 13 cm. Find AB.  
**Q14** OM = 9.2 mm. OC = 21.6 mm. Find AB, to 1 decimal place.  
**Q15** AB = 2.7 m. CD = 3.2 m. Find AC, to 3 significant figures.