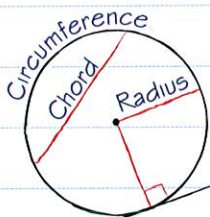


A*
A
B
C
D

Circle facts

You need to know the names of the different parts of a circle.



Diameter = radius \times 2

The other parts of a circle are shown on pages 57 and 81.

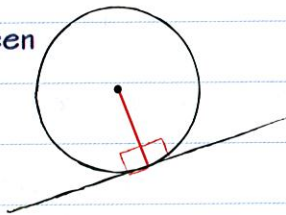
When you are solving circle problems:

- correctly identify the angle to be found
- use all the information given in the question
- mark all calculated angles on the diagram
- give a reason for each step of your working.

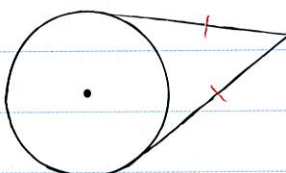
You might need to use angle facts about triangles, quadrilaterals and parallel lines in circle questions. There is a list of angle facts on page 52.

Key circle facts

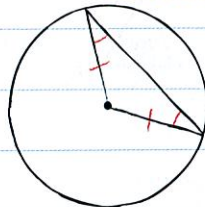
1 The angle between a radius and a tangent is 90° .



2 Two tangents which meet at a point outside a circle are the same length.



3 A triangle which has one vertex at the centre of a circle and two vertices on the circumference is an ISOSCELES TRIANGLE.



Each short side of the triangle is a radius, so they are the same length.

Remember that the base angles of an isosceles triangle are equal.

Worked example

A and B are points on the circumference of a circle centre O. AC and BC are both tangents to the circle. Angle $BCA = 42^\circ$. Work out the size of the angle marked x.

$AC = BC$ (tangents from a point outside a circle are the same length)

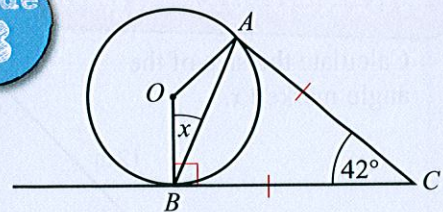
$$\angle ABC = \frac{180^\circ - 42^\circ}{2} = 69^\circ$$

(base angles in an isosceles Δ are equal, and angles in a Δ add up to 180°)

$$x + 69^\circ = 90^\circ \quad (\text{angle between a tangent and a radius} = 90^\circ)$$

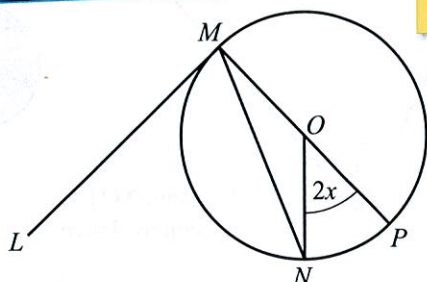
$$x = 21^\circ$$

grade B



$AC = BC$, so mark these lines with a dash. Make sure you write down the circle fact you are using as well. To get full marks, you have to give a reason for each step of your working.

Now try this



Angle LMN is the angle at M with 'arms' ML and MN.

M, N and P are points on a circle, centre O.
LM is a tangent to the circle.
MOP is a straight line.
Angle $NOP = 2x^\circ$.
Prove that angle $LMN = (90 - x)^\circ$ (4 marks)

edexcel

grade A