

Circle Theorems

Starter

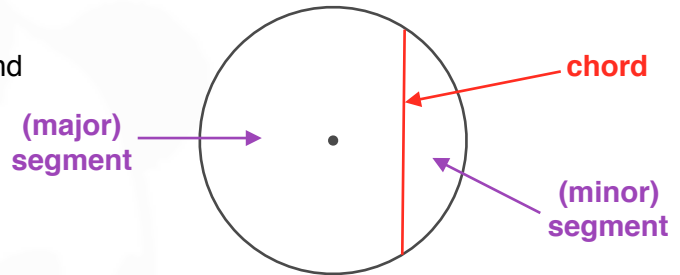
1. (Review of last lesson)

- (a) Find the equation of the tangent to the circle $x^2 + y^2 = 29$ at the point $P(5, 2)$.
 (b) The tangent cuts the x -axis at the point Q . Find the coordinates at Q .

Notes

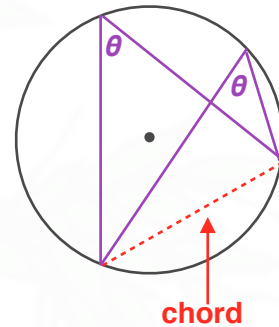
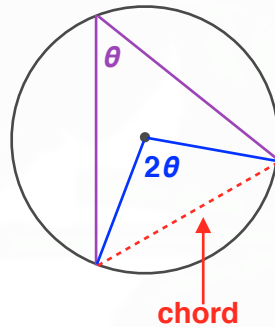
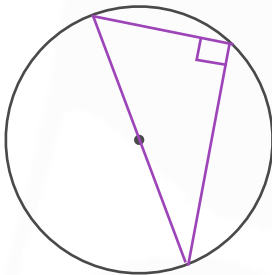
A chord splits a circle into two segments.

The larger one is called the (major) segment and the smaller one is called the (minor) segment.



Circle theorems

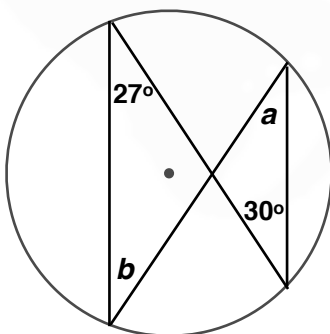
- Angle in a semi-circle is 90° .
- Angle at **centre** is twice angle at the **circumference** from the same chord
- Angles at **circumference** from the same chord are equal



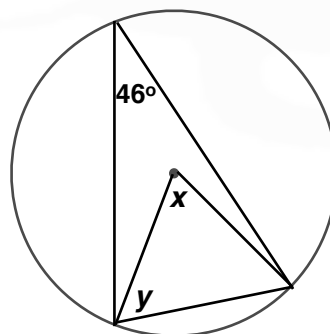
N.B. For 2 and 3 the angles must come from the **same chord**.

E.g. 1 Find the marked angle, giving a reason for your answer:

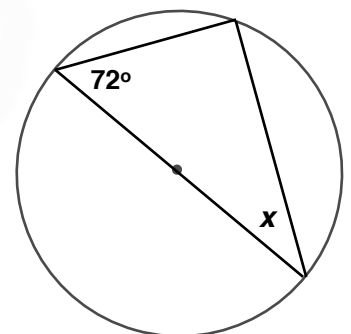
(a)



(b)

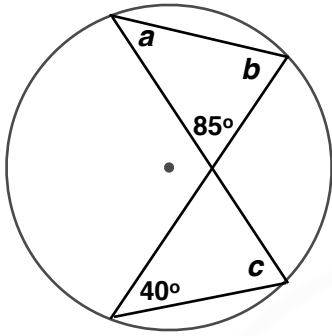


(c)

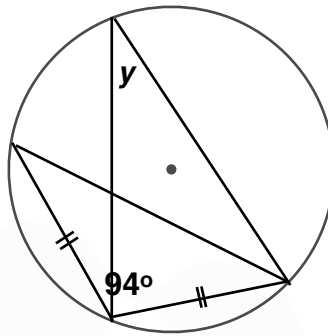


E.g. 2 Find the marked angle, giving a reason for your answer:

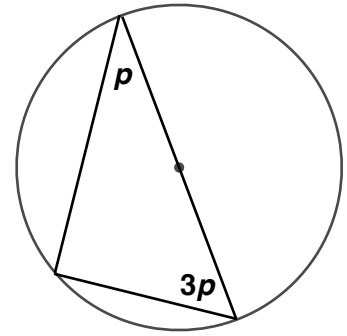
(a)



(b)



(c)



Video: [Circle theorems](#)

[Solutions to Starter and E.g.s](#)

Exercise

9-1 class textbook:

p74 E3.1 Qu 1-26 odd

A*-G class textbook:

p67 E3.1 Qu 1-26 odd

9-1 homework book:

p24 E3.1 Qu 1-14

A*-G homework book:

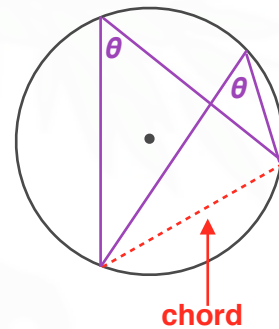
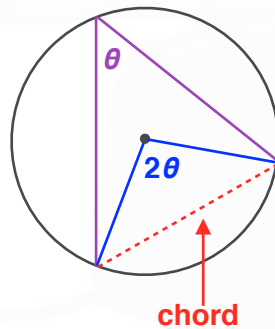
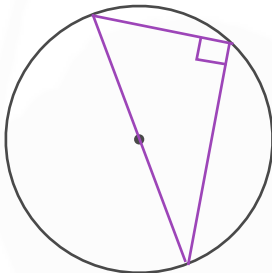
p18 E3.1 Qu 1-12

Summary

1. Angle in a semi-circle is 90° .

2. Angle at **centre** is twice angle at the **circumference** from the same chord

3. Angles at **circumference** from the same chord are equal



N.B. For 2 and 3 the angles must come from the **same chord**.

[Homework book answers \(only available during a lockdown\)](#)