

Cyclic Quadrilaterals

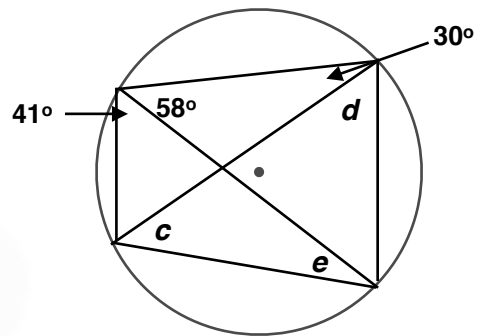
Starter

1. (Review of last lesson) Find the marked angles.

Working: $c = 58^\circ$ (angles at the circumference from the same chord are equal)

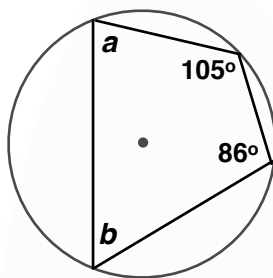
$d = 41^\circ$ (angles at the circumference from the same chord are equal)

$e = 30^\circ$ (angles at the circumference from the same chord are equal)

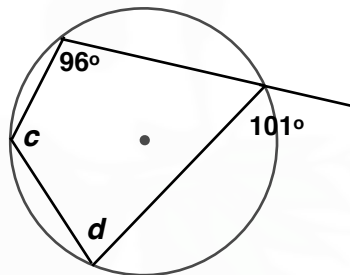


E.g. 1 Find the marked angles, giving as reason for your answers:

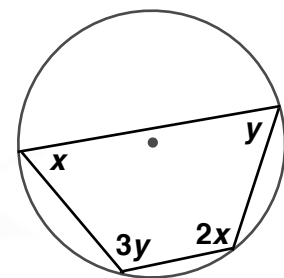
(a)



(b)



(c)



Working:

(a) $a = 180 - 86 = 94^\circ$ because opposite angles in a cyclic quadrilateral add up to 180° .
 $b = 180 - 105 = 75^\circ$ because opposite angles in a cyclic quadrilateral add up to 180° .

(b) $c = 101^\circ$ because the exterior angle of a cyclic quadrilateral equals the opposite interior angle.
 $d = 180 - 96 = 84^\circ$ because opposite angles in a cyclic quadrilateral add up to 180° .

(c) $x + 2x = 180$ because opposite angles in a cyclic quadrilateral add up to 180° .
 So $3x = 180 \quad \therefore x = 60^\circ$
 Similarly $y + 3y = 180 \quad \Rightarrow \quad 4y = 180 \quad \therefore y = 45^\circ$

Video: [Circle theorems](#)
Video: [Cyclic quadrilaterals](#)

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

Exercise

9-1 class textbook: p77 E3.2 Qu 1-15 odd, 16-20
 A*-G class textbook: p70 E3.2 Qu 1-4 odd, 15-20
 9-1 homework book: p26 E3.2 Qu 1-12
 A*-G homework book: p19 E3.2 Qu 1-12

Homework book answers (only available during a lockdown)