Year 10 higher topic 16

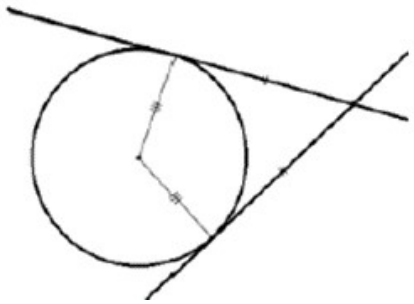
Circle theorems

What careers would use these skills?

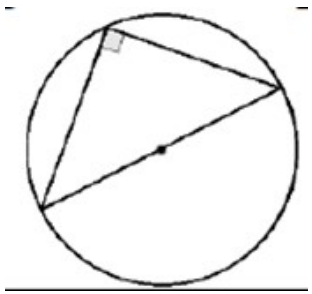
Photography– radius and diameter are important for changing the focal length and aperture to ensure a picture is clear.

Ship navigation, construction, engineers.

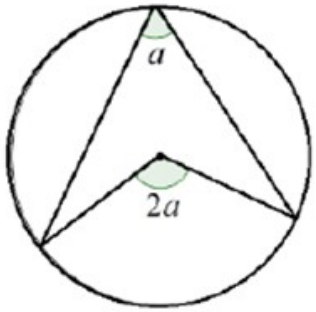
Tangents from an external point are equal in length



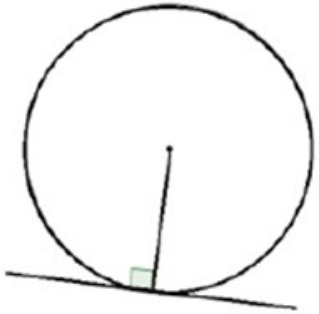
Angles in a semi circle have a right angle at the circumference



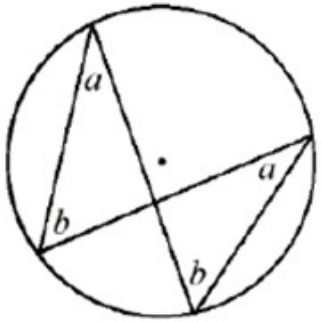
The angle at the centre is twice the angle at the circumference.



A tangent is perpendicular to the radius at the point of contact

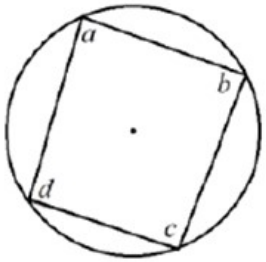


Angles in the same segment are equal



Cyclic quadrilateral

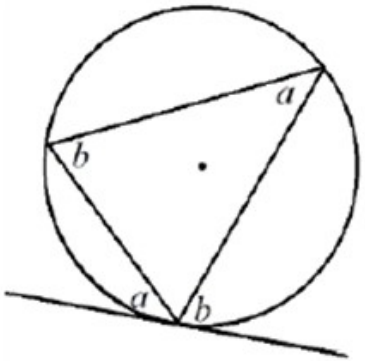
Opposite angles in a cyclic quadrilateral add up to 180˚



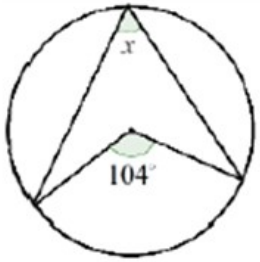
$a + c = 180^\circ$

$b + d = 180^\circ$

Alternate segment theorem

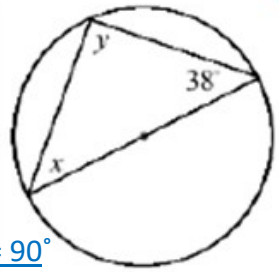


Examples



x = 104 ÷ 2

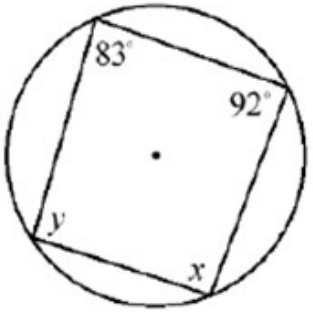
= 52˚



y = 90˚

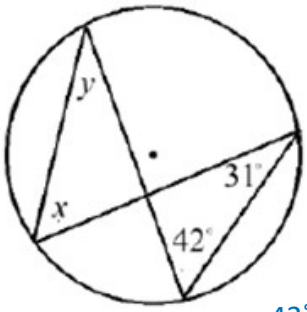
x = 180—90—38

x = 52˚



x = 180—83 = 97˚

y = 180—92 = 88˚



x=42˚

y = 31˚