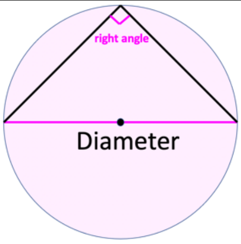
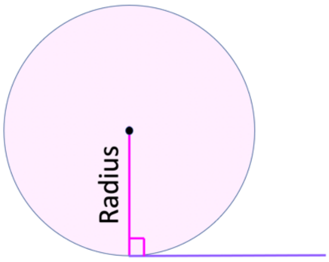
Does the circle have a diameter? (Is one of the lengths of a triangle inside the circle the diameter?)



The angle opposite the diameter is a right angle (angle in a semi-circle is a right angle)

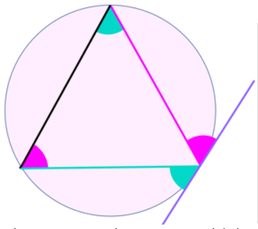
Does the circle have a line outside?

Is there a radius (line coming from the centre)?



A tangent meets a radius at

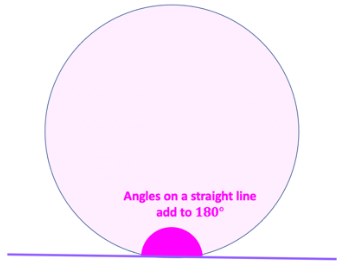
Is there a triangle in the circle (where each vertex is on the circumference)?



Each of the outside angles are equal to the angle inside of the triangle that isn't touching the line that touches the angle outside. In other words, the pink angle inside the triangle can't be the angle that touches the pink line and green angle inside the triangle can't be the angle that touches the green line

Same colour pair angles are equal (alternate segment theorem)
Note: This is not the same as the left column because no radius (and hence no centre) is involved

Angles on a straight line add to 180

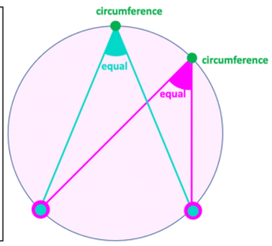


This is not a circle theorem, but it is often necessary to use this.

Are there lots of lines inside the shape?

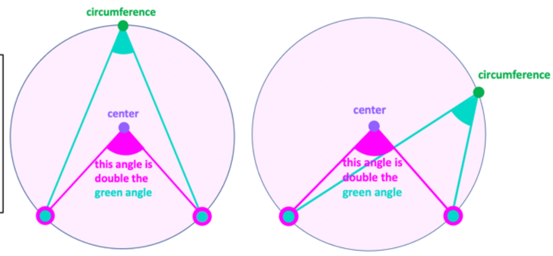
Requirements:
- both angles come from the circumference
- The lines coming out of both angles (the lines that form the angle) end up at the same place (double coloured circles)

Note:
This is not the same as the last theorem since both angles come from the circumference unlike the last theorem where one comes from the centre and the other comes from the circumference



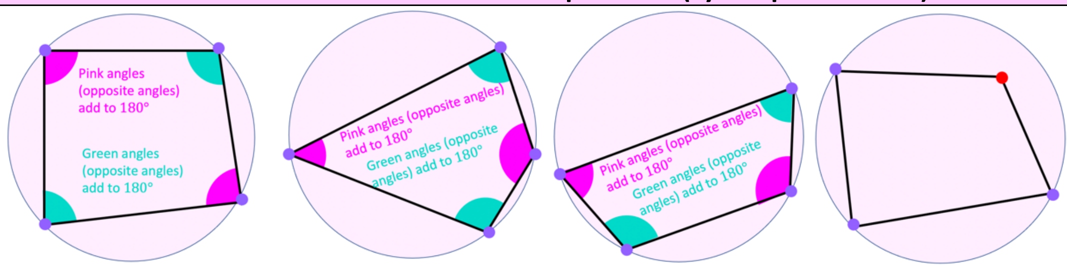
Angles on the same segment are equal

Requirements:
- one angle comes from the circumference and the other angle comes from the centre
- The lines coming out of both angles (the lines that form the angle) end up at the same place (double coloured circles)



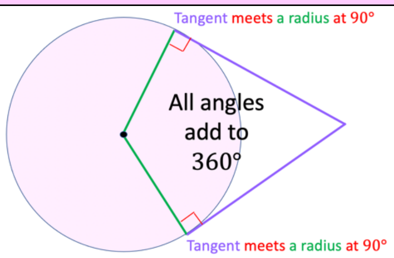
The angle at the centre is double the angle at the circumference

Does the circle have a four-sided shape inside (cyclic quadrilateral)?

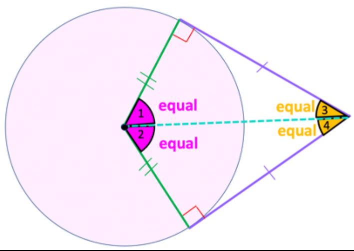


Opposite angles of a cyclic quadrilateral add to 180°. We just NEED to MAKE SURE that all 4 vertices to lie on the circumference of the circle.
Notice on the 4th diagram that the red point is not on the circumference, so the theorem does not apply here! Opposite angles do NOT add to

Does the circle have 2 lines outside?

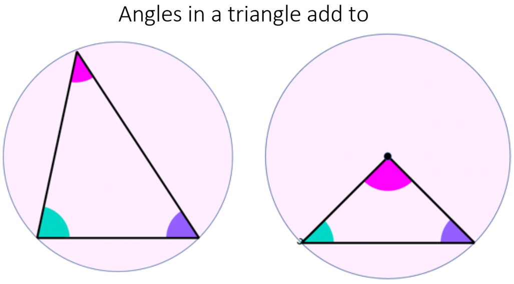


We can draw a line which forms 2 identical triangles and bisects each of the angles (pink angles 1 and 2 are equal and orange angles 3 and 4 are equal)

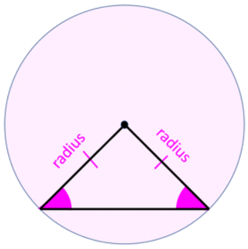


Does the circle have a triangle inside?

Angles in a triangle add to



Radii of a circle are equal and therefore form an isosceles triangle



Double check you didn't miss the alternate segment theorem earlier on in row 2