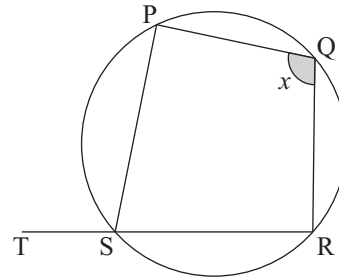
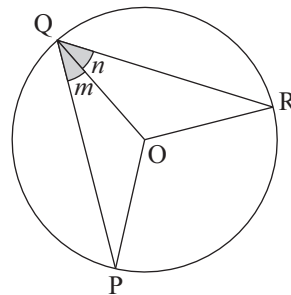


## TASK 4.18

1. Prove that  $\angle PST = x$  (ie. the exterior angle of a cyclic quadrilateral equals the opposite interior angle).



2. O is the centre of the circle. Copy and complete the statements below to prove that 'the angle at the centre of a circle is twice the angle at the circumference.'



$\angle OPQ = \square$  (triangle OPQ is isosceles)  
 $\angle POQ = \square$  (sum of angles in a triangle =  $180^\circ$ )  
 $\angle ORQ = \square$  (triangle ORQ is isosceles)  
 $\angle ROQ = \square$  (sum of angles in a triangle =  $180^\circ$ )  
 $\angle POR = 360 - \angle POQ - \angle ROQ$  (sum of angles at a point add up to  $360^\circ$ )  
 $\angle POR = 360 - (\square) - (\square)$   
 $= 360 - \square + \square - \square + \square$   
 $= \square + \square$   
 $= 2(\square + \square)$

This proves that angle POR is twice the angle PQR, ie. the angle at the centre of the circle is twice the angle at the circumference.