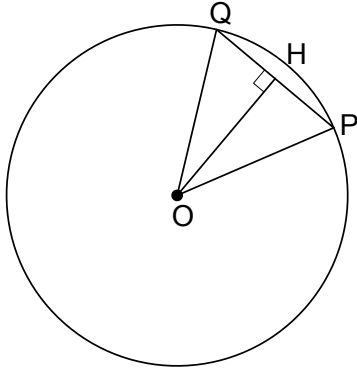**Draw a circle of radius 3.4 cm and centre O. Draw any radius OP. Make an angle POQ = 60 degree with the point Q on the circle. Join PQ. Find the length of chord PQ and also the distance of chord from the centre.**

Solution:

In ΔPOQ :

$OQ = OP = 3.4cm$ as the radiuses of a circle.

If two sides of a triangle are equal, then the angles opposite those sides are equal, so

$\angle OQP = \angle OPQ$

The sum of angles of the triangle is $180°$:

$\angle OQP + \angle OPQ + \angle POQ = 180°$

$\angle POQ = 60°$ - given, so

$2\angle OQP + 60° = 180°$

$\angle OQP = \angle OPQ = \angle POQ = 60°$

If two angles of a triangle are equal, then the sides opposite those angles are equal, so

$PQ = OQ = OP = 3.4cm$

The distance of chord from the centre is the length of the perpendicular OH to PQ.

Since ΔPOH is the right triangle, then

$OH = OP\sin\angle OPQ = 3.4\sin 60° = 1.7\sqrt{3} = 2.94cm$

Answer:$PQ = 3.4cm$, the distance of chord from the centre is$2.94cm$.