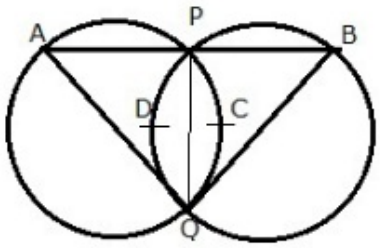
Exercise 11A

Question 13:

Given: Two equal cirles intersect at points P and Q. A straight line through P meets the circles in A and B.

To Prove : QA = QB

Construction: Join PQ



Proof: Two circles will be congruent if and only if they have equal radii.

If two chords of a circle are equal then their corresponding arcs are congruent.

Here PQ is the common chord to both the circles.

Thus, their corresponding arcs are equal.

So, arc PCQ = arc PDQ

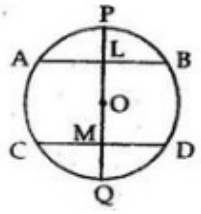
$\therefore$ $\angle QAP = \angle QBP$ [congruent arcs have the same degree mesure]

$\therefore$ QA = QB [isosceles triangle, base angles are equal]

Question 14:

Given: AB and CD are the two chords of a circle with centre O. Diameter POQ bisects them at L and M.

To Prove : AB $\parallel$ CD.



Proof: AB and CD are two chords of a circle with centre O. Diameter POQ bisects them at L and M.

Then, OL $\perp$ AB

and, OM $\perp$ CD

$\therefore$ $\angle ALM = \angle LMD$

$\therefore$ AB $\parallel$ CD [alternate angles are equal]

********** END **********