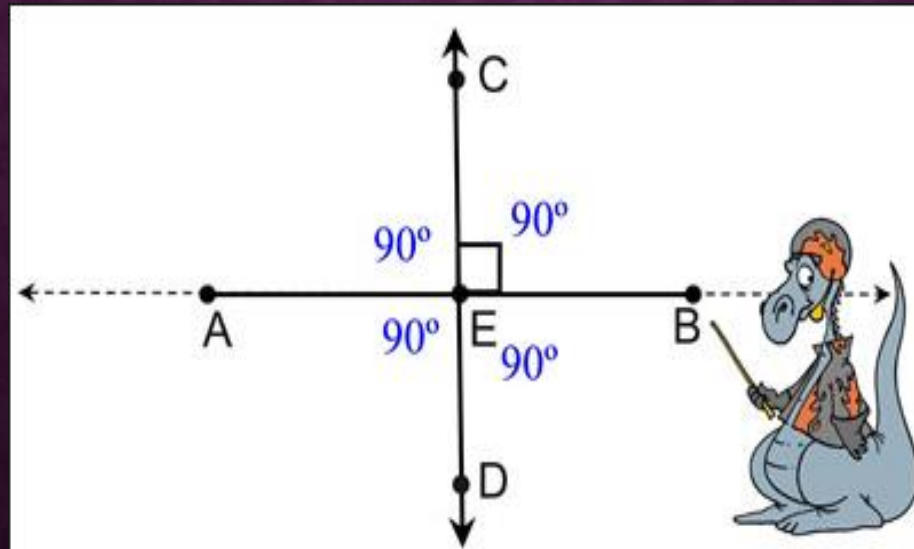# CLASS-6
# MODULE- 3/8

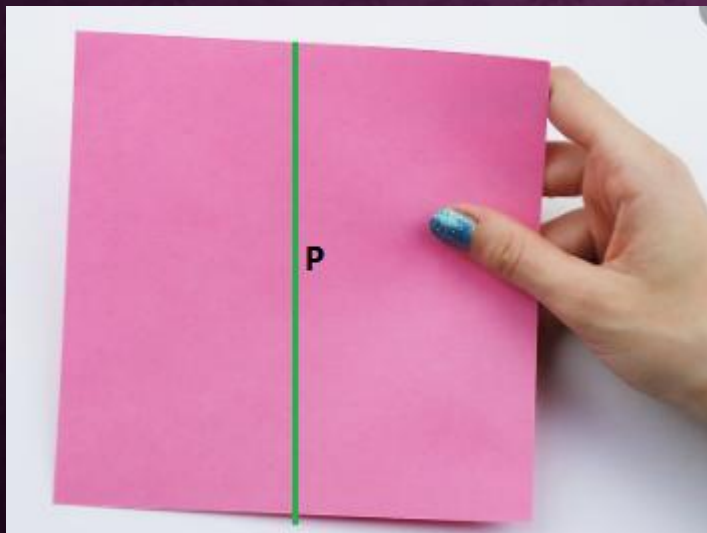## PRACTICAL GEOMETRY

# PERPENDICULARS

- Two lines ( or rays or segments ) are said to be perpendicular if they intersect such that the angles between them are right angles.
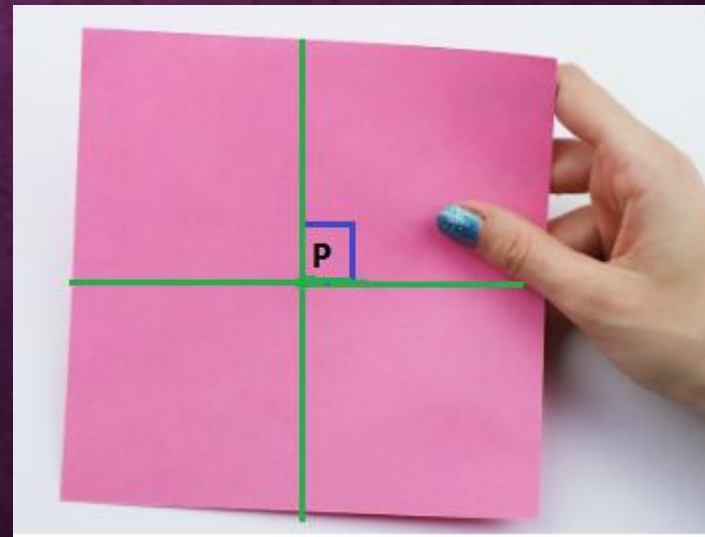
# PERPENDICULAR TO A LINE THROUGH A POINT ON IT
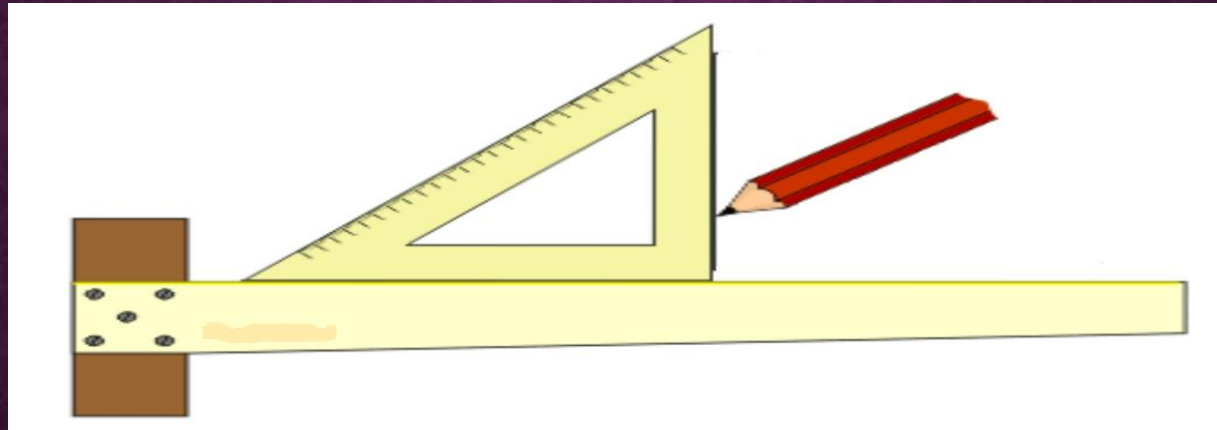## PAPER FOLD METHOD

- Given a line *l* drawn on a paper sheet and a point P lying on the line.

- Simply fold the paper along the line as shown.

- Again fold the paper so that crease passes through the marked point P
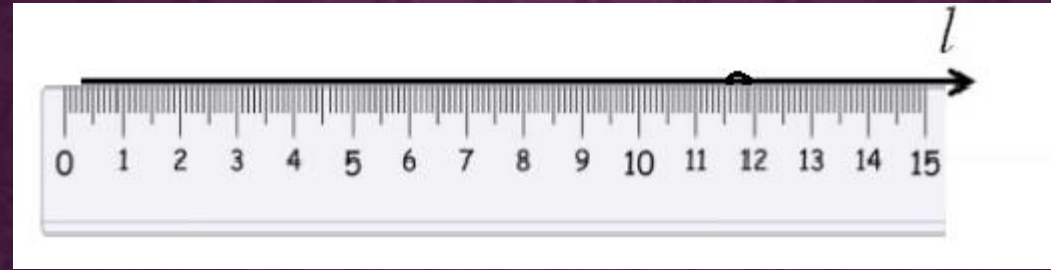- Open out ; the crease is perpendicular to $l$ .

# PERPENDICULAR TO A LINE THROUGH A POINT ON IT
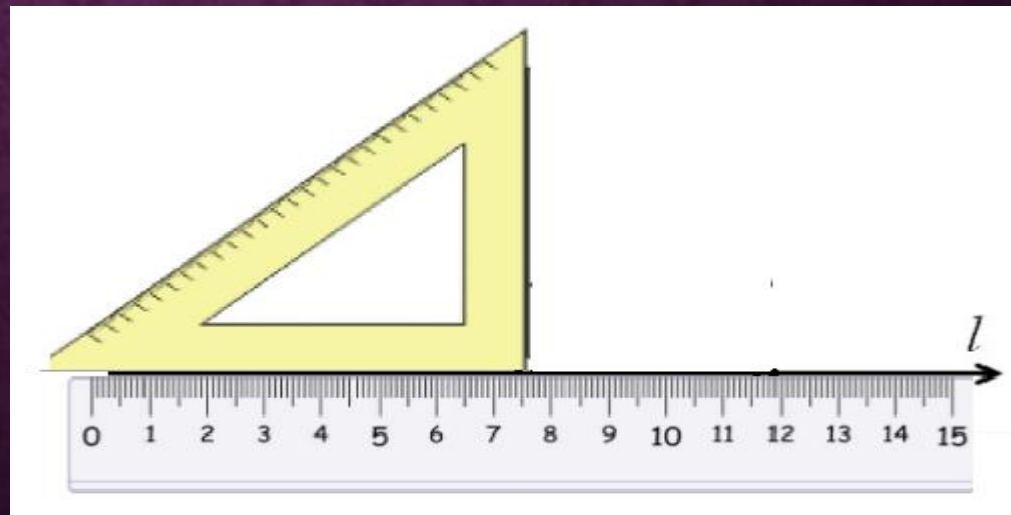## USING RULER AND A SET-SQUARE



Step : 1 : A line $l$ and a point P are given. Note that P is on the line $l$.
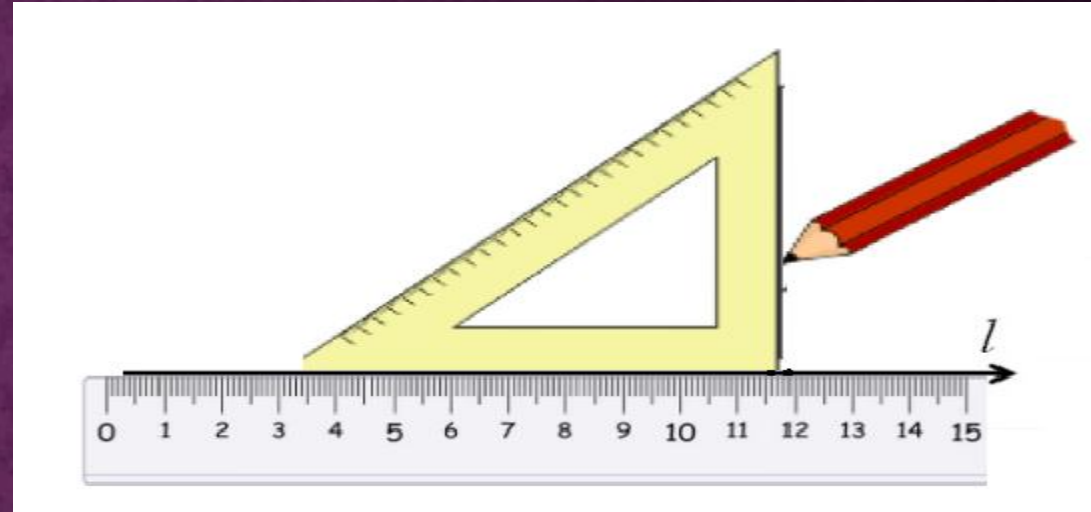
- Place a ruler with one of its edges along $l$. Hold this firmly.



- Place a set-square with one of its edges along the already aligned edge of the ruler such that the right angled corner is in contact with the ruler

- Slide the set square along the edge of ruler until its right angled corner coincides with P



- Hold the set-square firmly in this position. Draw PQ along the edge of the square
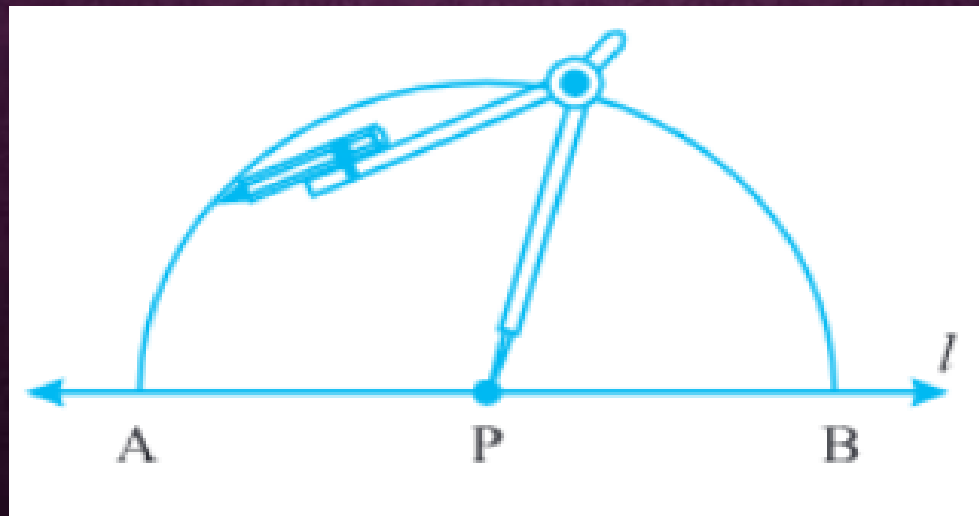
# PERPENDICULAR TO A LINE THROUGH A POINT ON IT USING RULER AND A COMPASSES
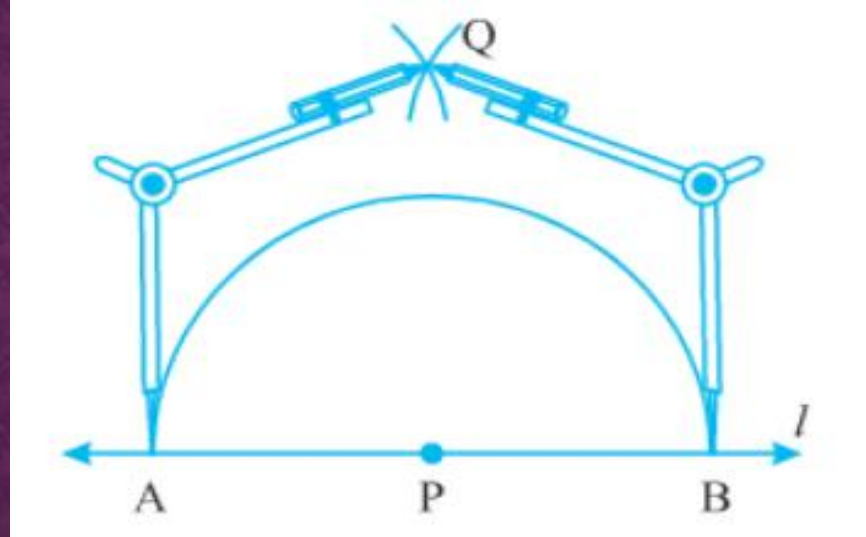
- Given a point P on a line $l$.

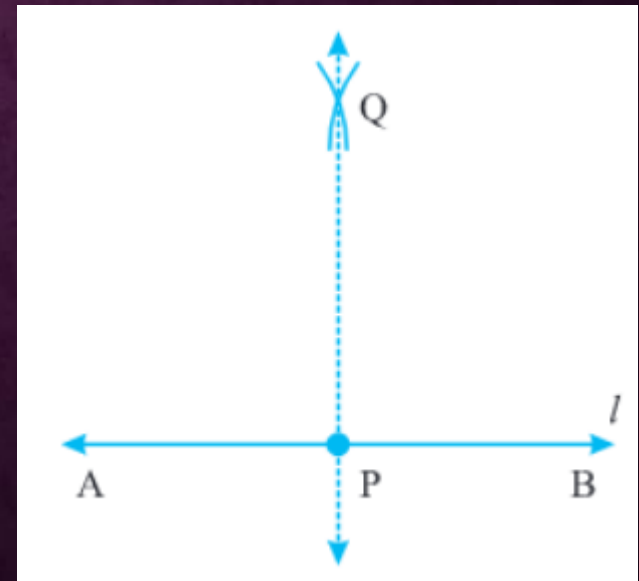

- With P as centre and a convenient radius, construct an arc intersecting the line at two points A and B.

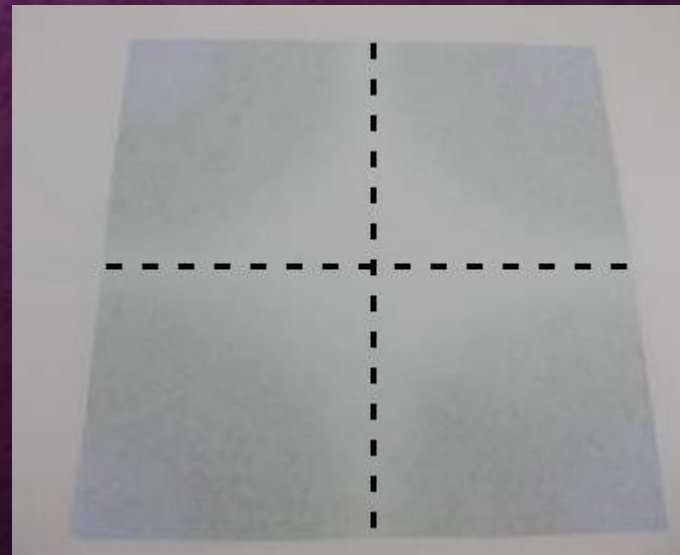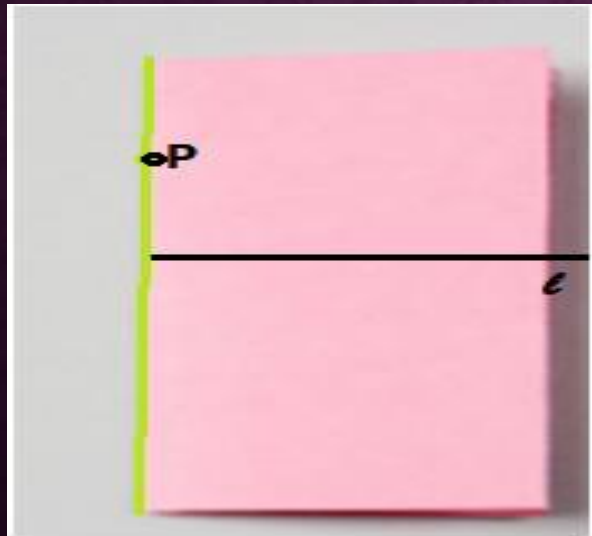- With A and B as centres and a radius greater than AP construct two arcs, which meet each other at Q



- Join PQ. Then PQ is perpendicular to $l$.

# PERPENDICULAR TO A LINE THROUGH A POINT NOT ON IT
## PAPER FOLDING METHOD

- Take a sheet of paper. Draw a line on it .Make a point P away from $l$.

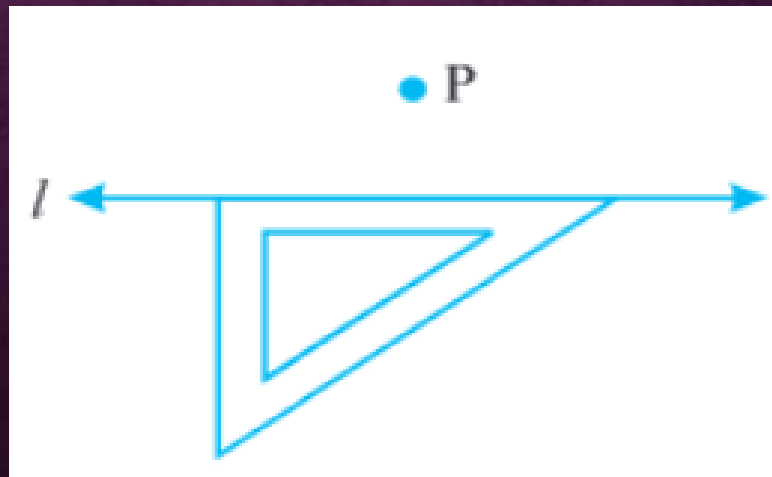- Fold the sheet such that the crease passes through P.

# PERPENDICULAR TO A LINE THROUGH A POINT NOT ON IT
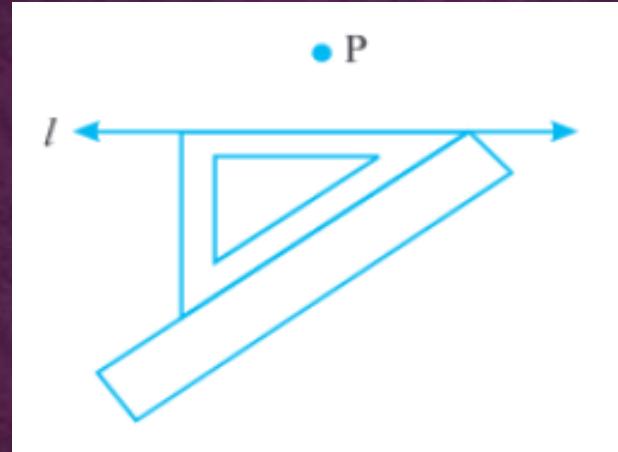## METHOD USING RULER AND SET-SQUARE

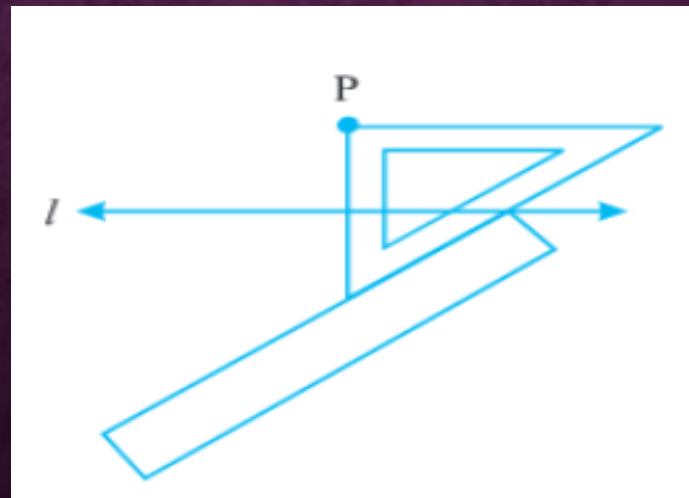• Let $l$ be the given line and P be a point outside $l$.



Place a set-square on $l$ such that one arm of its right angle aligns along $l$.
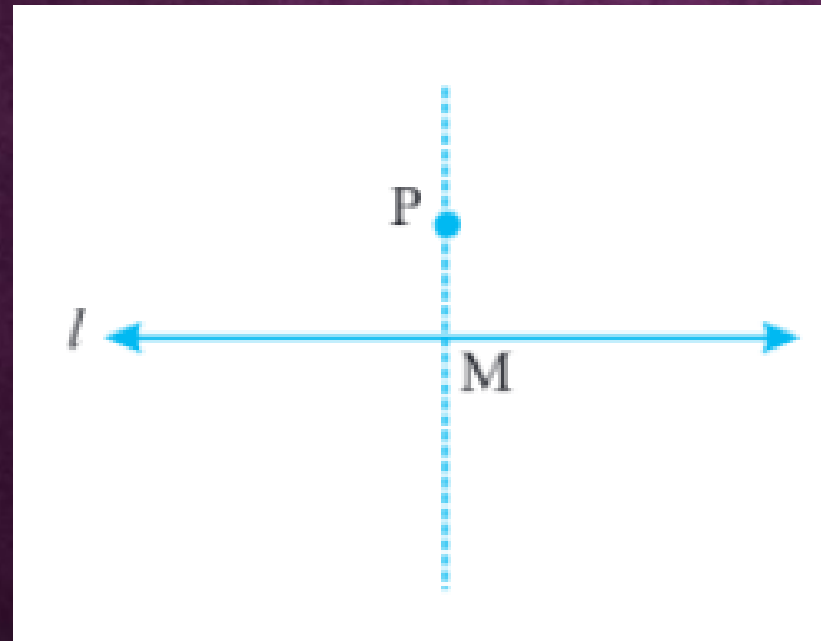
- Place a ruler along the edge of the opposite of the right angle of the set-square.



- Hold the ruler fixed. Slide the set-square along the ruler till point P touches the other arm of the set-square.
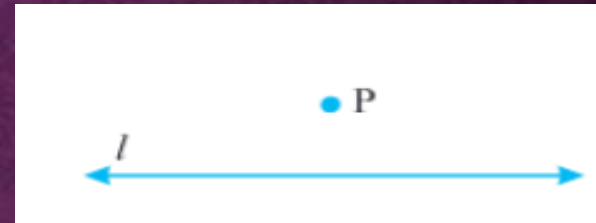
- Join PM along the edge through P, meeting $l$ at M.
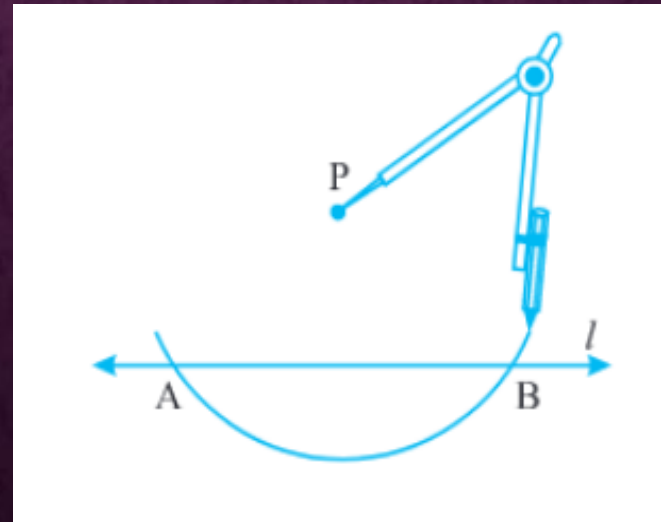
- Now PM is perpendicular to $l$.

# PERPENDICULAR TO A LINE THROUGH A POINT NOT ON IT
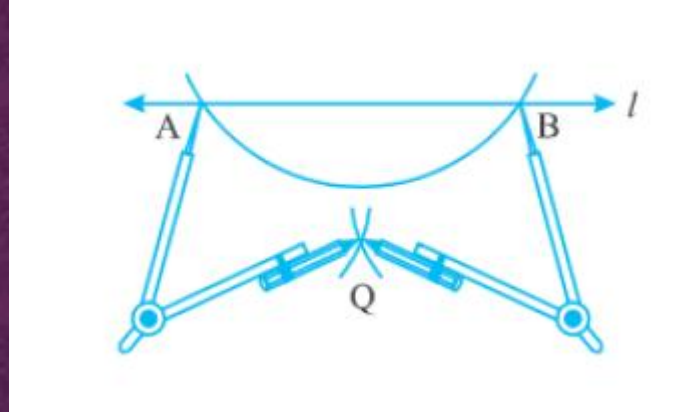## METHOD USING RULER AND COMPASSES

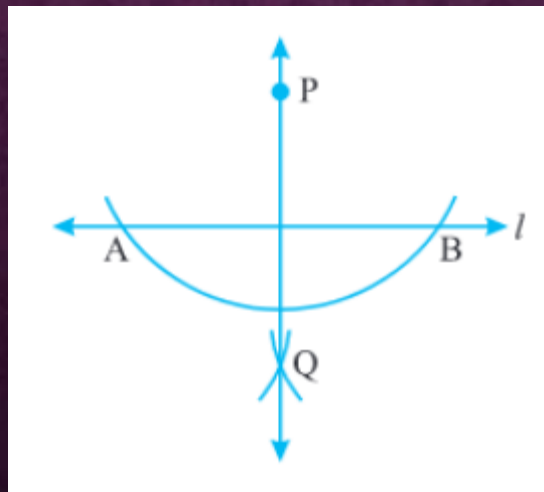- Given a line $l$ and a point P not on it.



- With P as a centre, draw an arc which intersects line $l$ at two points A and B.

- Using the same radius and with A and B as centres, construct two arcs that intersect point, say Q, on the other side.



- Join PQ. Thus, PQ is perpendicular to $l$.

# THANK YOU

- V V DURGA BHAVANI

- TGT (MATH/PHY)

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