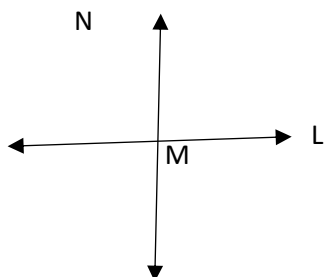




STANDARD 6TH: CHAPTER 17

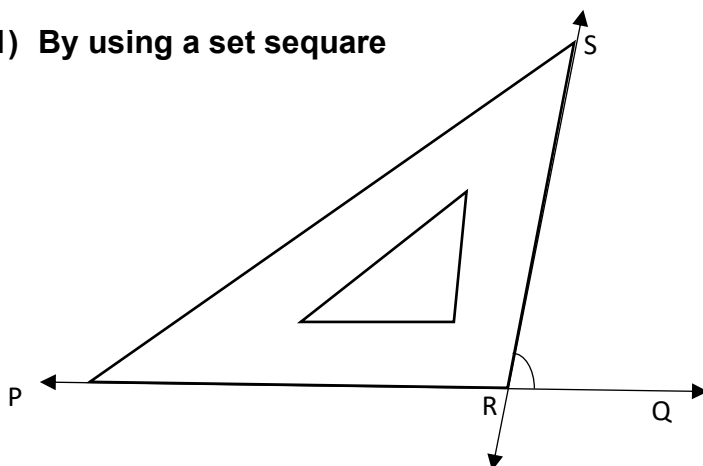
Geometrical Constructions



Line L intersects line n at point M. Angle between Line L & n is 90° then we can say both lines are perpendicular to each other & symbol ' $\perp$ ' (invested T)

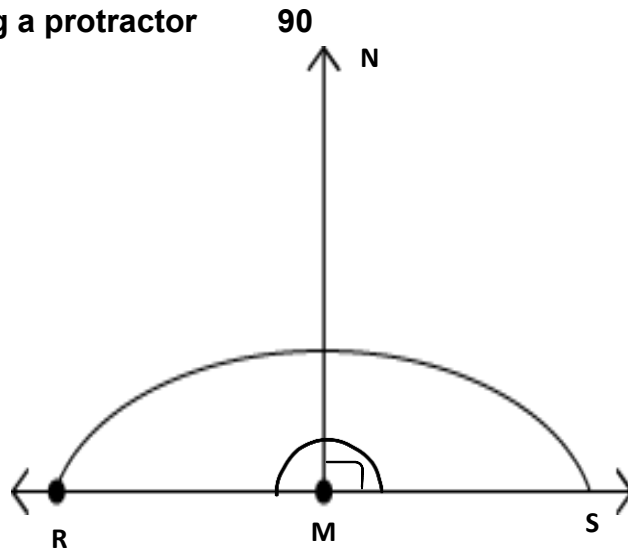
Drawing a perpendicular to a line at a point on the line.

1) By using a set square



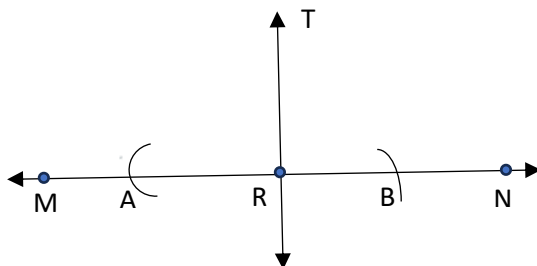
- 1) draw a line PQ. Take pt R anywhere on line.
- 2) Place set square on line in such a way that vertex of its right angle is at pt. R & one arm of right angle falls on line PQ
- 3) Draw Line Rs along other arm of right angle of that set square.
- 4) Line Rs is perpendicular to Line at R

2) By using a protractor



- 1) Draw line RS & take pt. M anywhere on it.
- 2) Place the center of protractor on pt. M as shown
- 3) Mark pt N at 90° mark
- 4) Draw line passing thro' pts M & N
- 5) Line MN is $\perp$ to line RS

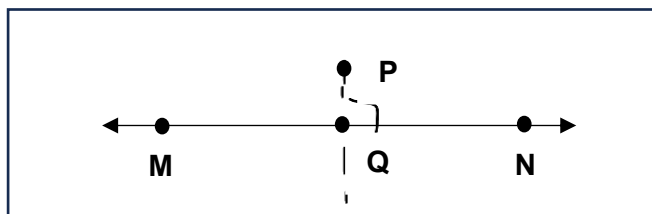
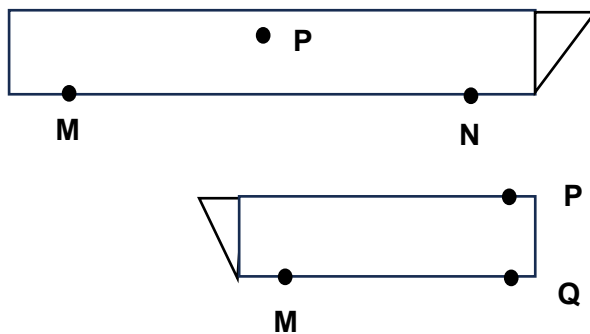
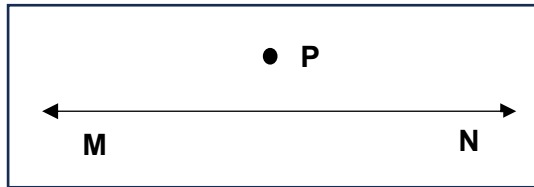
3) By using compass



- 1) Draw Line MN. Take pt. R anywhere on it.
- 2) Place compass pt. on R. Draw 2 arcs on either side of R to cut Line MN at pts A & B.
- 3) Place compass pt. A & taking convenient distance greater than half the length of AB, draw an arc on one side of line.
- 4) Now place compass pt at B & taking same distance, draw another arc to intersect first arc at T.
- 5) Draw line passing through R & T
- 6) Line RT is $\perp$ to line MN.

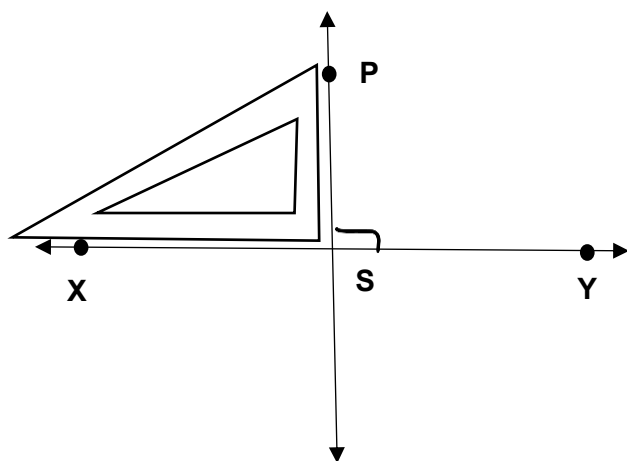
Drawing a perpendicular to a line from a pt outside the line.

1) By folding the paper



- 1) Draw line MN on a paper take pt. P anywhere outside.
- 2) Keeping line MN in view, fold the paper along line MN.
- 3) Now fold paper thro' pt. P in such a way that part of line MN on one side of fold falls on the part of line MN on the other side of the fold.
- 4) Unfold the paper. Name the pt. of intersection of 2 folds as Q. Draw line PQ. This line falls on a fold in the paper.
- 5) Line $PQ \perp$ line MN.

2) Using a set square

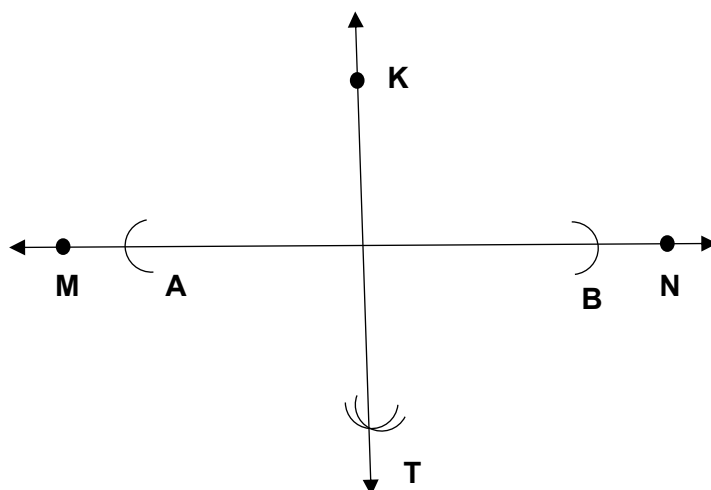


- 1) Draw line xy take pt. Pany where outside xy.
- 2) Place one of the arms of right angle of a set square along line xy.
- 3) Slide the set square along the line in such a way that other arm of its right-angle touches pt P. Draw a line along this side. Passing through'?

Let it be PS

Line $PS \perp$ line xy

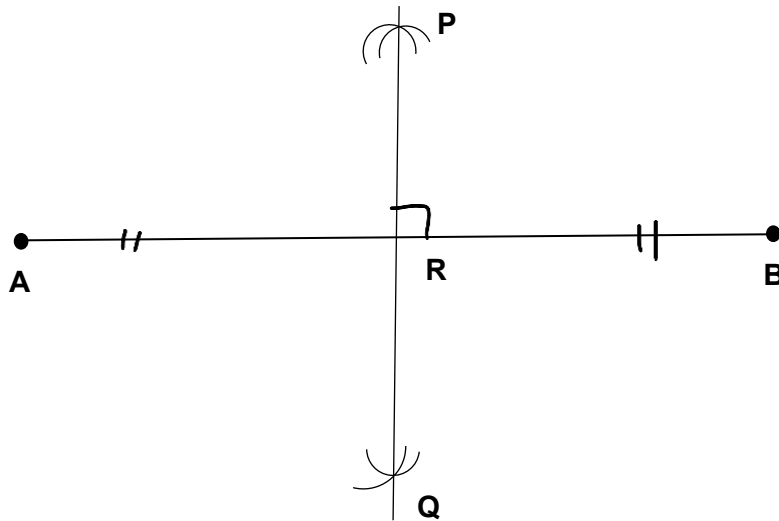
3) Using compass & ruler



- 1) Draw line MN. Take any pt. K outside the line.
- 2) Place compass pt at K & using any convenient distance draw arcs to cut the line MN at 2 pts A & B
- 3) Place compass pt at A & taking distance more than half of AB, draw arc on lower side of MN.

- 4) Place compass pt at B repeat same procedure & draw an arc to cut previous arc at
- 5) Draw line KT which is $\perp$ to line MN

Drawing perpendicular bisector of a segment using compass.



- 1) Draw segment AB
- 2) Place compass pt at A & take distance more than half the length of seg AB, draw 2 arcs, one below & one above AB
- 3) Place compass pt at B & repeat the procedure & draw 2 arcs intersecting the previous arcs at P & Q. Draw PQ Line PQ $\perp$ seg AB & AR = BR.