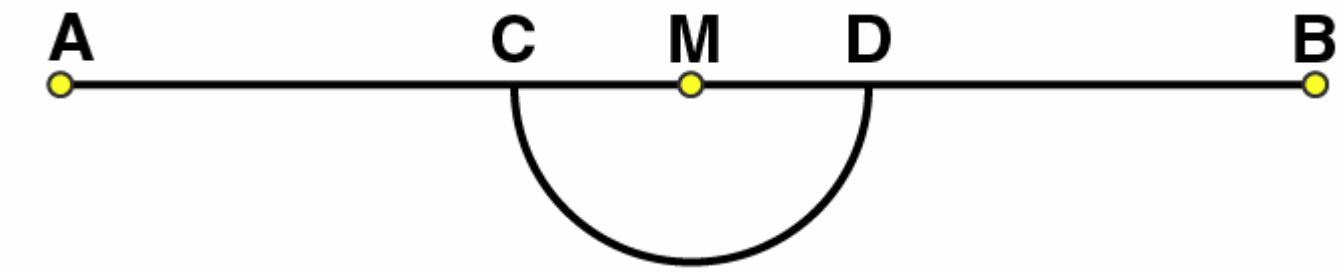
Access NCERT Solutions for Class 6 Chapter 14: Practical Geometry Exercise 14.4

1. Draw any line segment $\overline{AB}$. Mark any point M on it. Through M, draw a perpendicular to $\overline{AB}$. (use ruler and compasses)

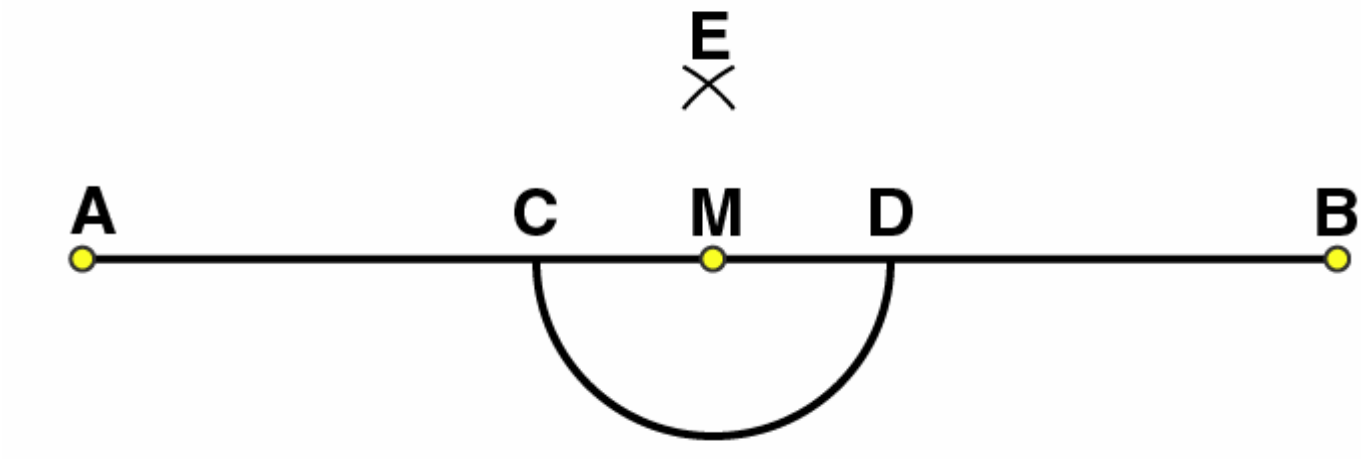
Solutions:

(1) Draw a line segment $\overline{AB}$
and mark a point M on it.

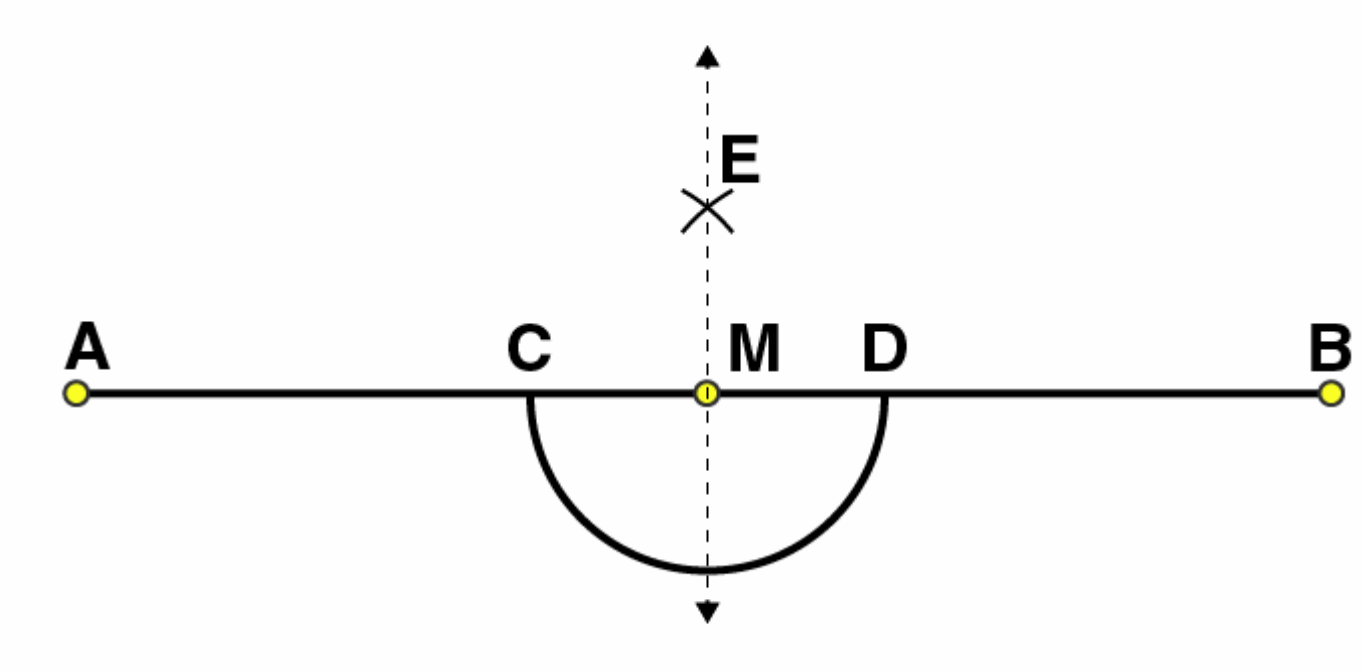
(2) Taking M as centre and a convenient radius, construct an arc intersecting the line segment $\overline{AB}$
at points C and D respectively.



(3) By taking centres as C and D and radius greater than CM, construct two arcs such that they intersect each other at point E.



(4) Join EM. Now
$\overline{EM}$ is perpendicular to $\overline{AB}$

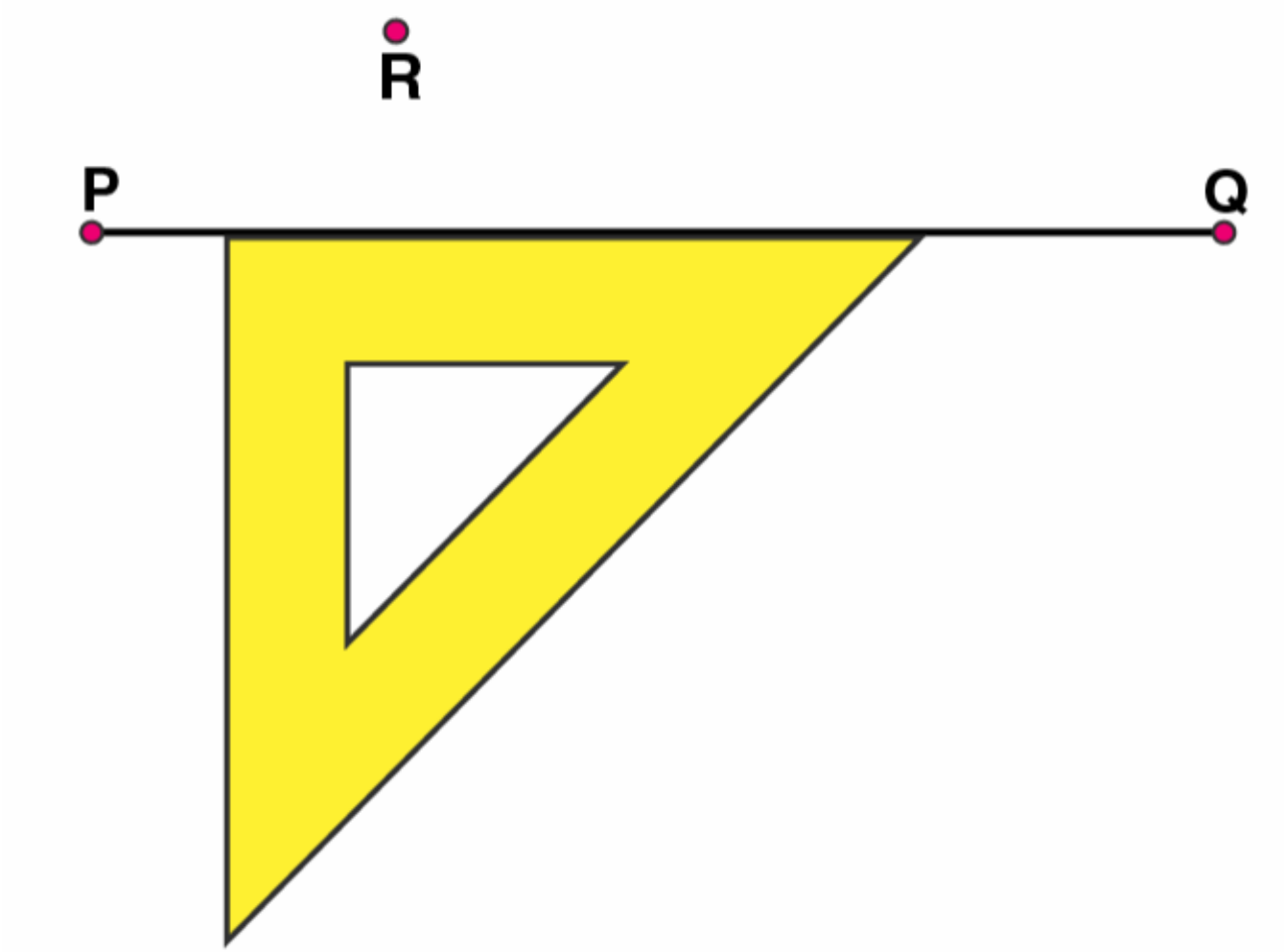


2. Draw any line segment $\overline{PQ}$. Take any point R not on it. Through R, draw a perpendicular to $\overline{PQ}$. (use ruler and set-square)

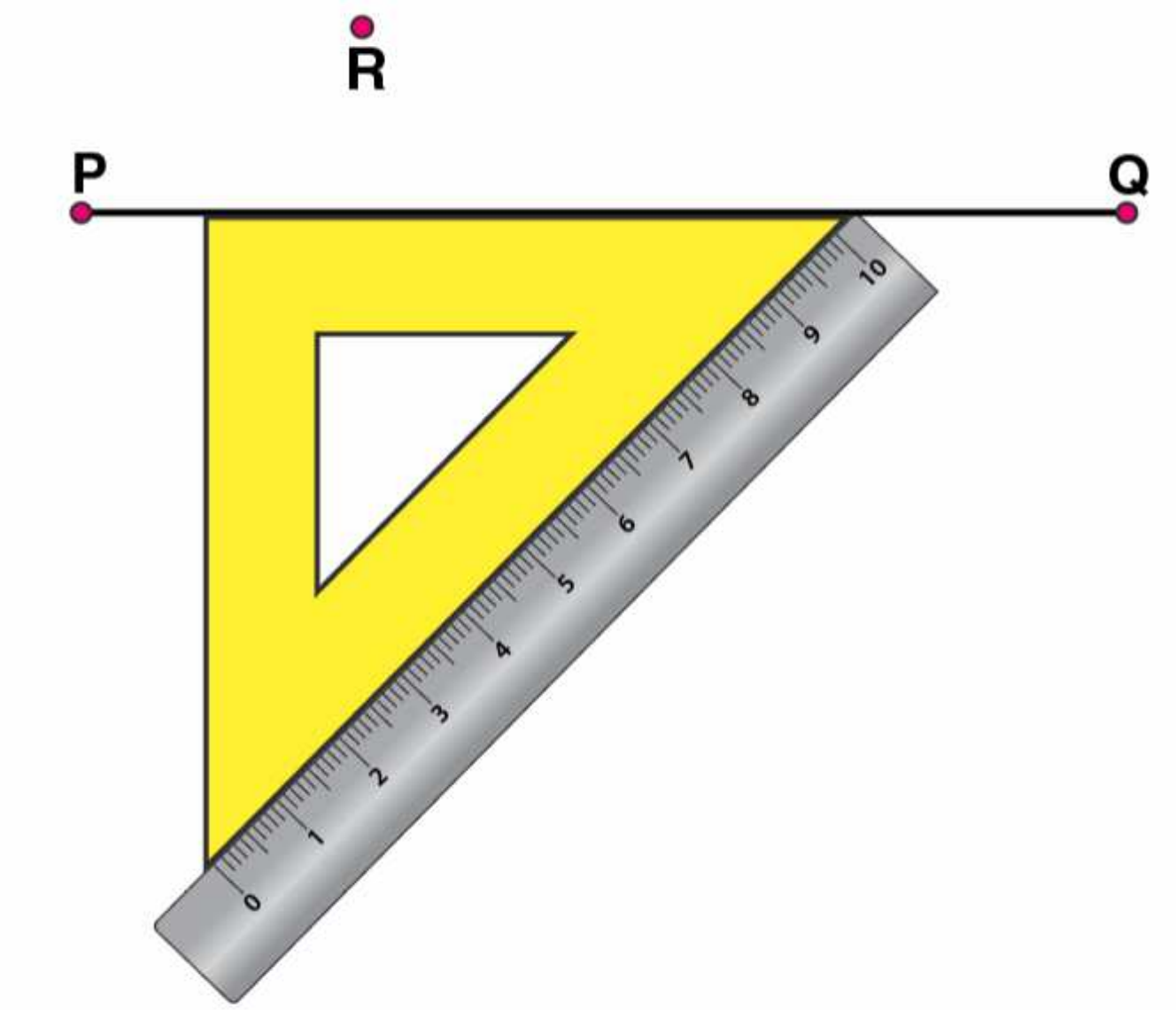
Solutions:

(1) Draw a given line segment $\overline{PQ}$
and mark a point R outside the line segment $\overline{PQ}$

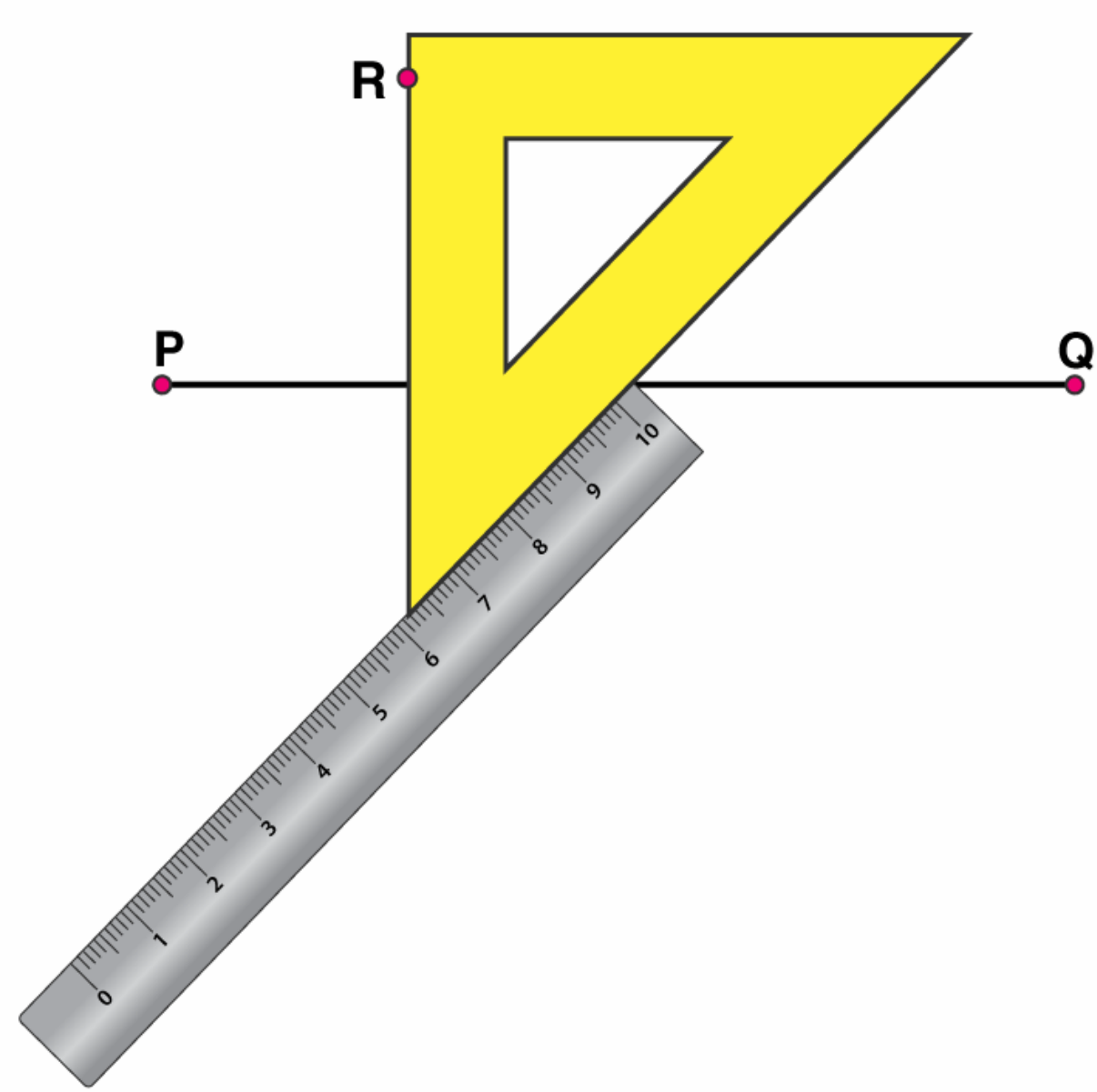
(2) Place a set square on $\overline{PQ}$
such that one of its right angles arm aligns along $\overline{PQ}$



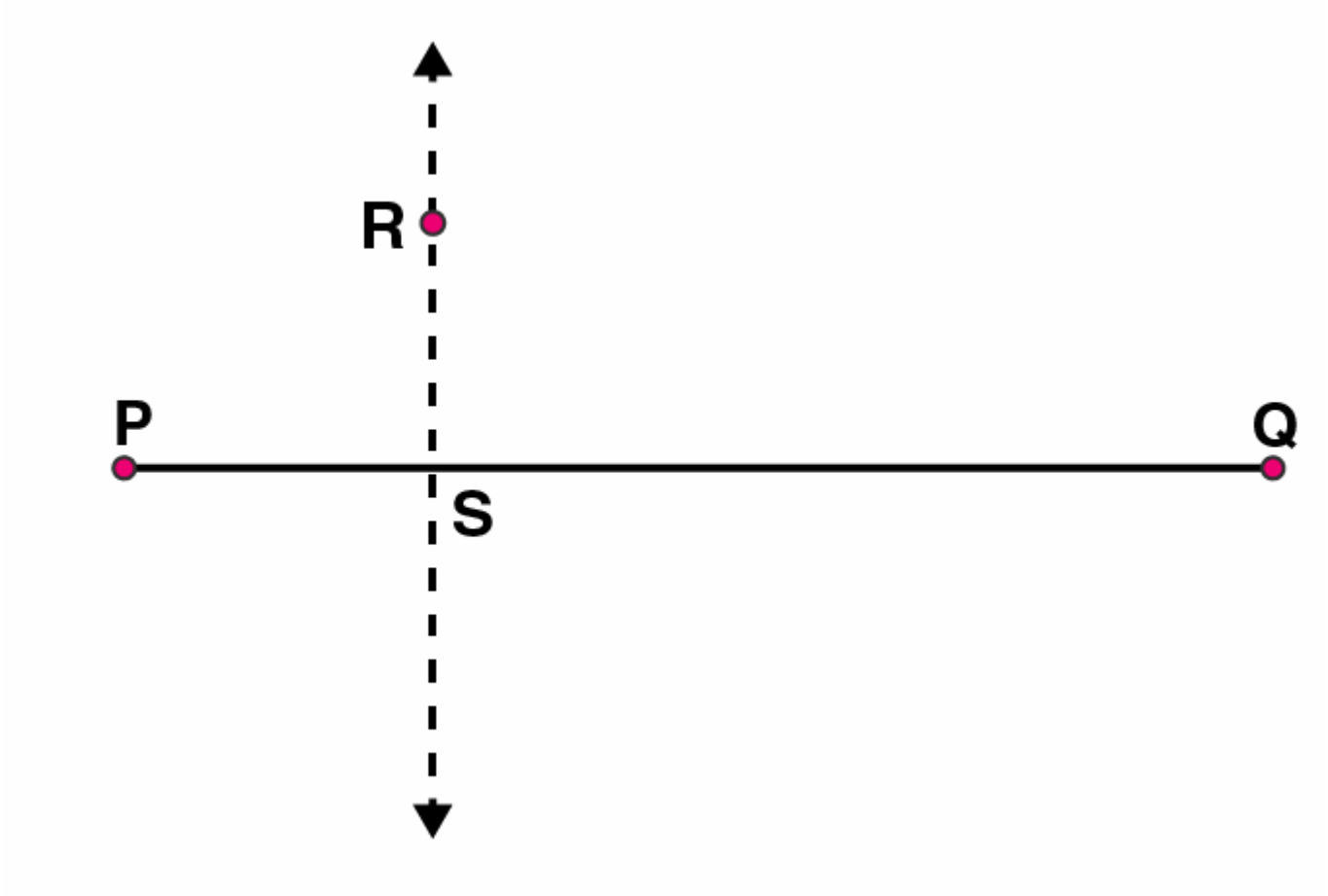
(3) Now, place the ruler along the edge opposite to right angle of set square.



(4) Hold the ruler fixed. Slide the set square along the ruler such that the point R touches the other arm of set square.



(5) Draw a line along this edge of set square which passes through point R. Now, it is the required line perpendicular to $\overline{PQ}$

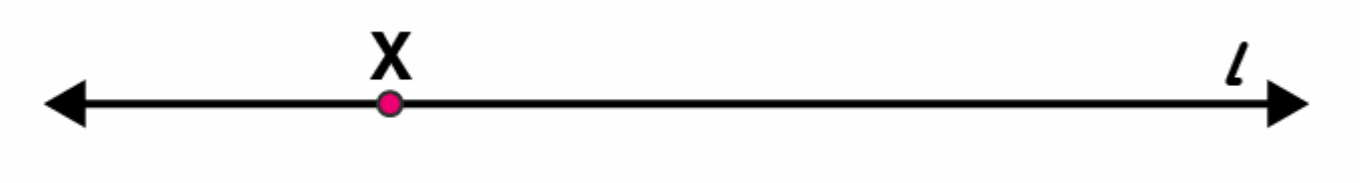


3. Draw a line l and a point X on it. Through X, draw a line segment $\overline{XY}$ perpendicular to l.

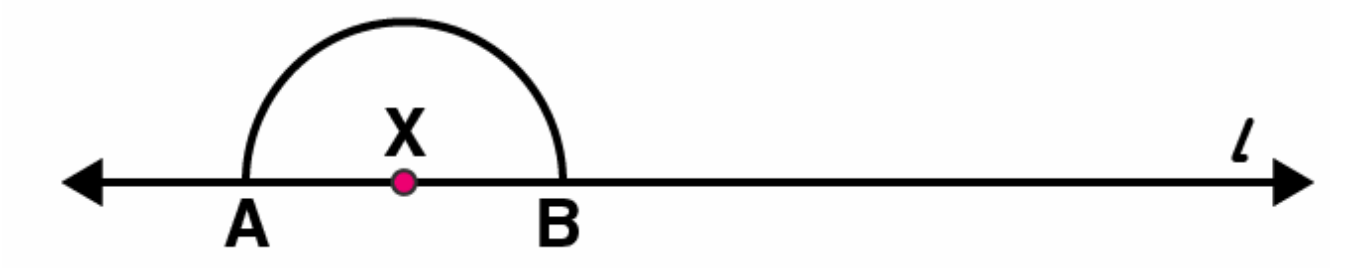
Now draw a perpendicular to XY at Y. (use ruler and compasses)

Solutions:

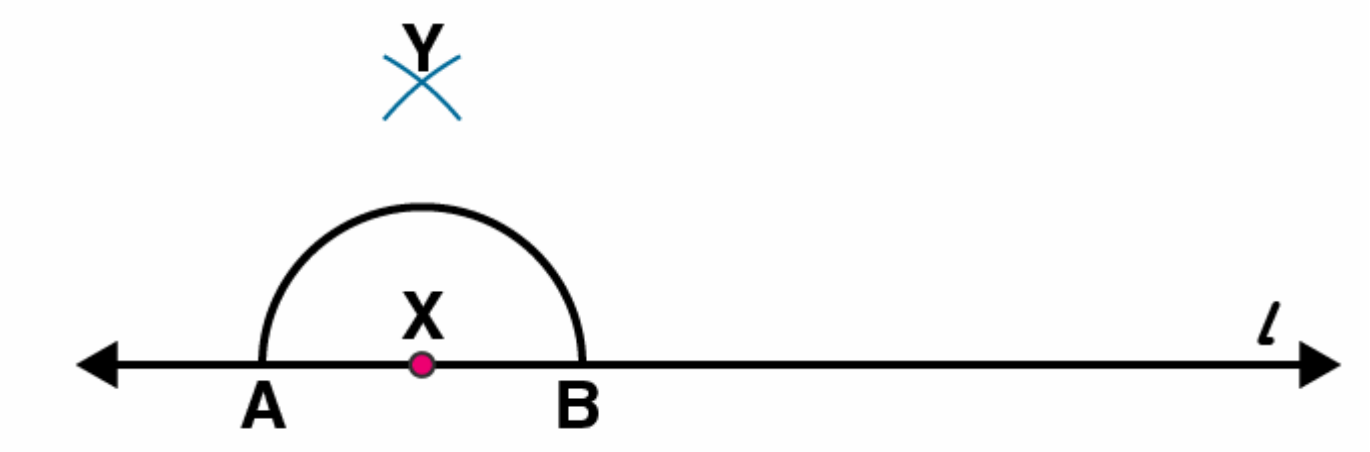
(1) Draw a line l and mark a point X on it.



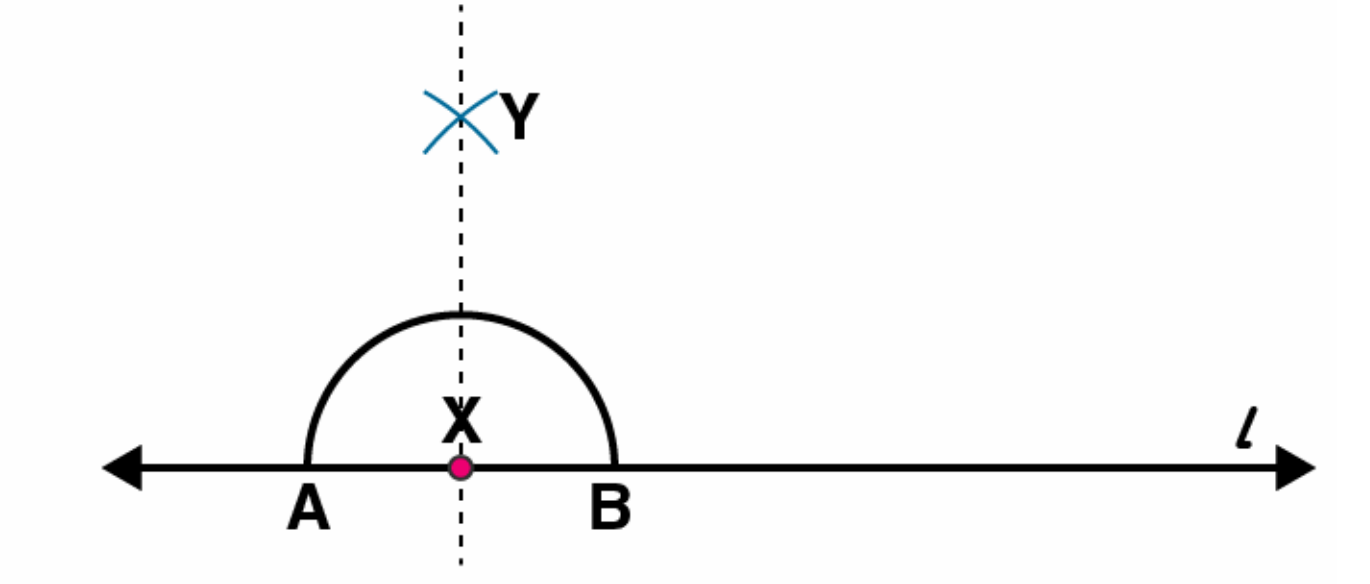
(2) By taking X as centre and with a convenient radius, draw an arc intersecting the line l at points A and B respectively.



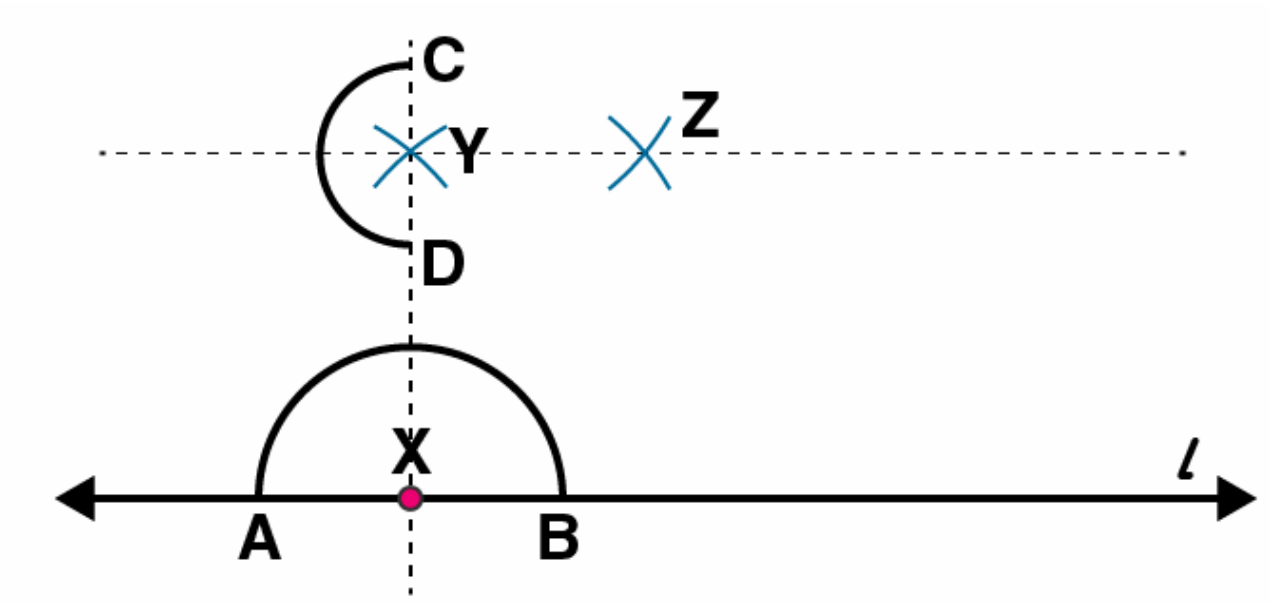
(3) With A and B as centres and a radius more than AX, construct two arcs such that they intersect each other at point Y.



(4) Join XY. Here $\overline{XY}$ is perpendicular to l



Similarly, by taking C and D as centres and radius more than CY, construct two arcs intersecting at point Z. Join ZY. The line $\overline{ZY}$ is perpendicular to $\overline{XY}$ at Y


C
Y
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