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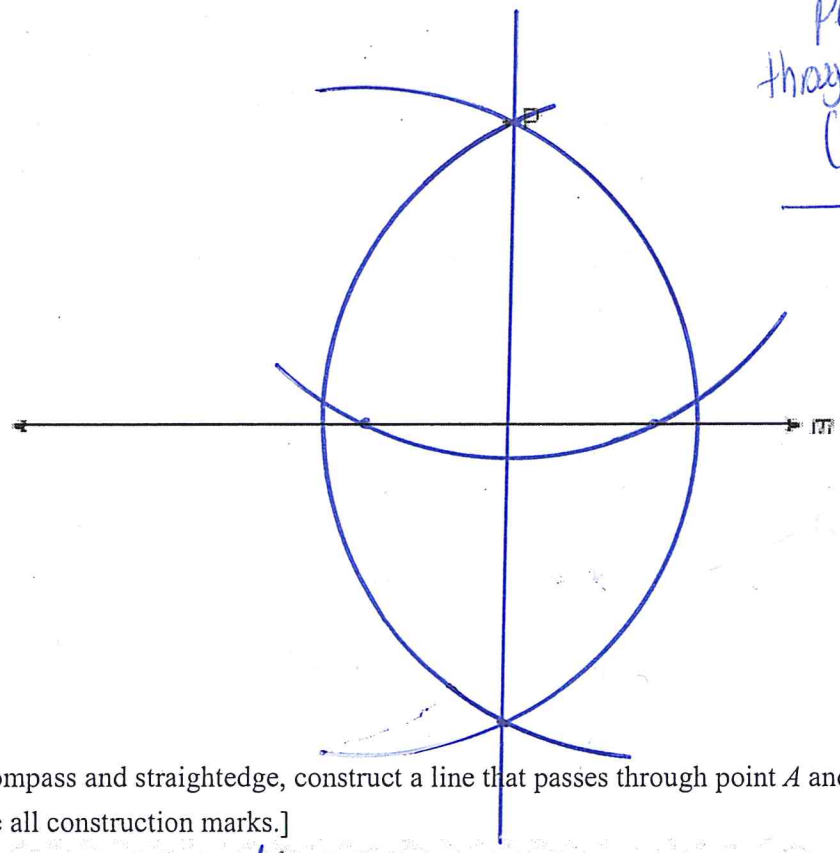
Date _____
Geometry

# *Constructions Using Perpendicular Bisector*

1. Using a compass and straightedge, construct a line that passes through point *P* and is perpendicular to line *m*. [Leave all construction marks.]

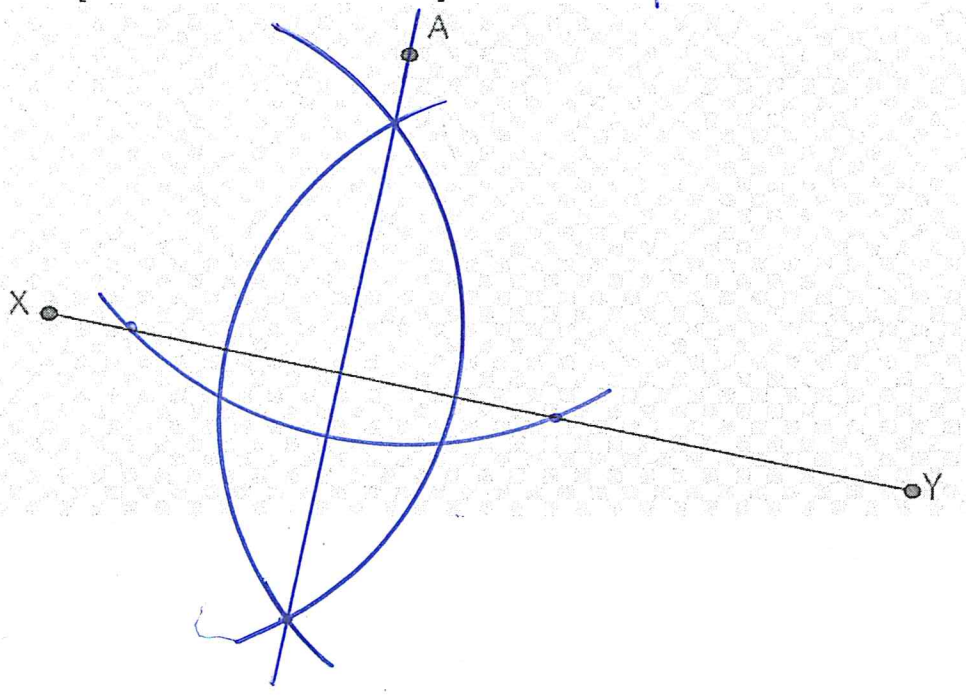



Perpendicular line through a point (Smiley face)

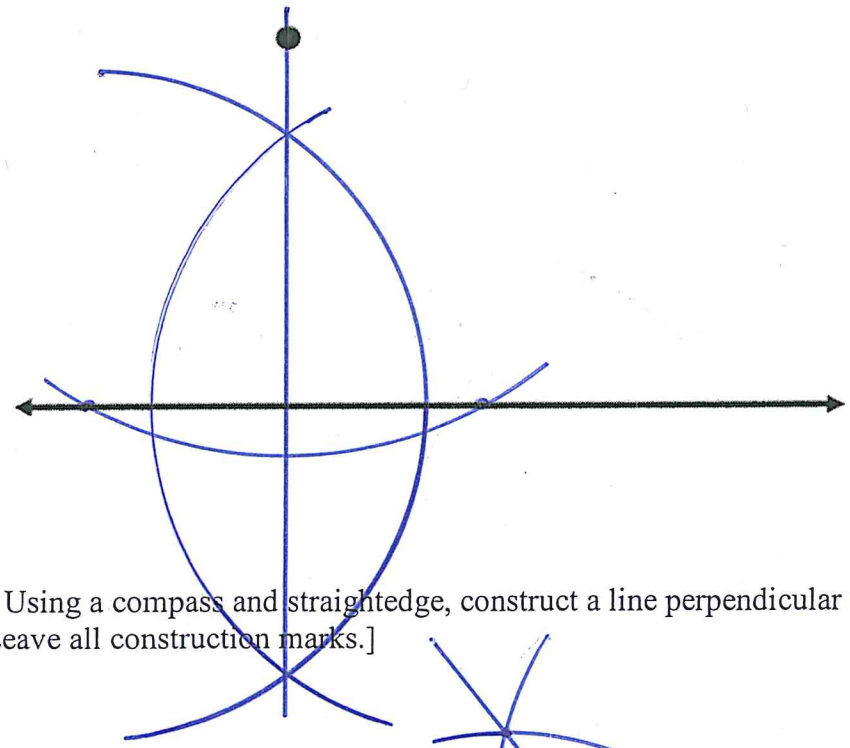
1) Draw an arc from the point that hits the line twice

2) Construct a perpendicular bisector using the two intersection points as endpoints

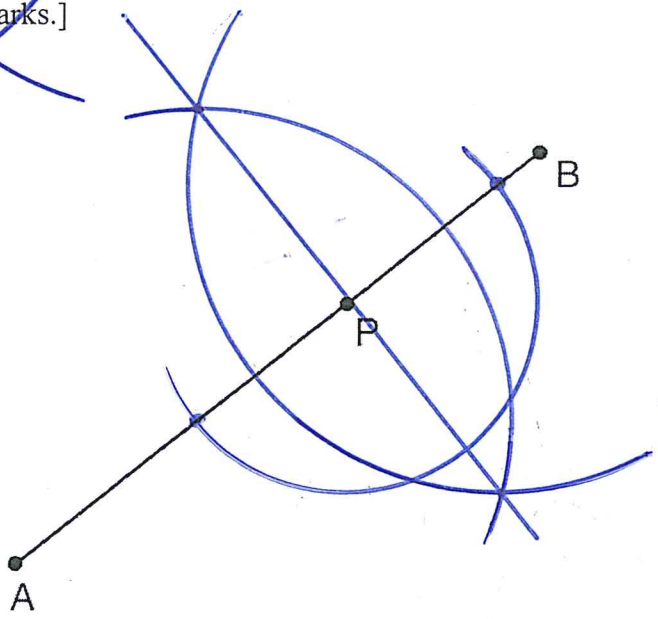
2. Using a compass and straightedge, construct a line that passes through point *A* and is perpendicular to $\overline{XY}$. [Leave all construction marks.]



3. Using a compass and a straightedge, construct a line perpendicular to the given line that passes through the given point.



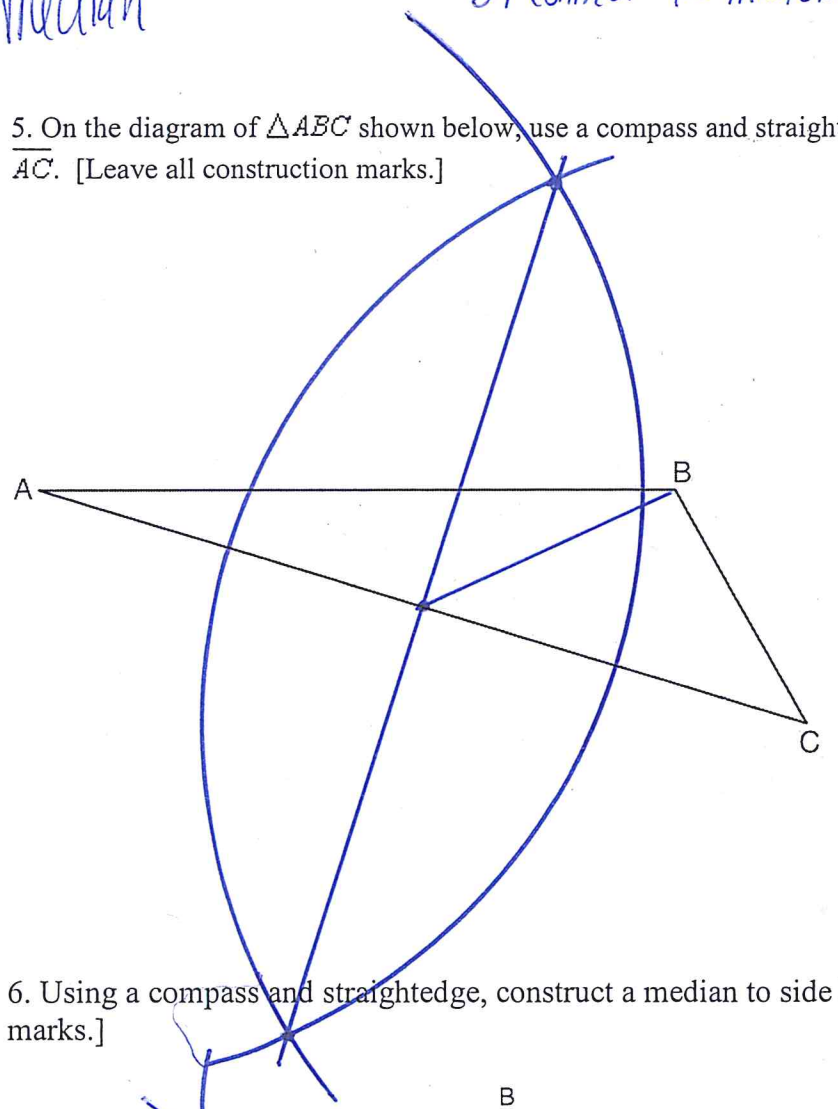
4. Using a compass and straightedge, construct a line perpendicular to $\overline{AB}$ through point $P$. [Leave all construction marks.]



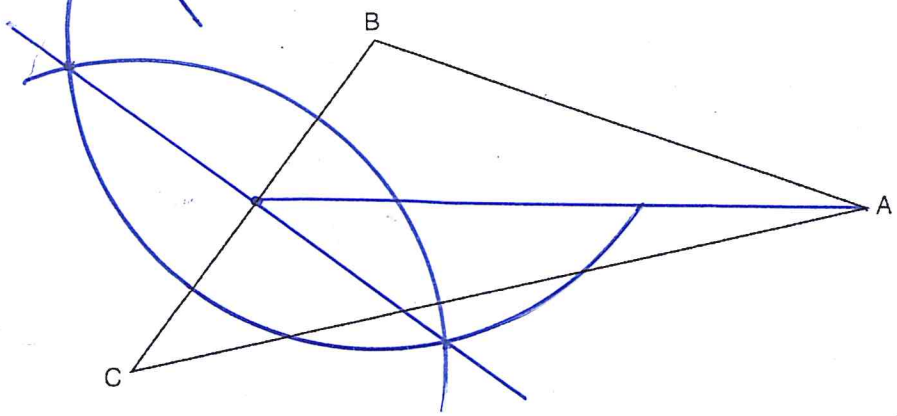
median

1) Construct a perpendicular bisector of the side
2) Connect the midpoint to the opposite vertex

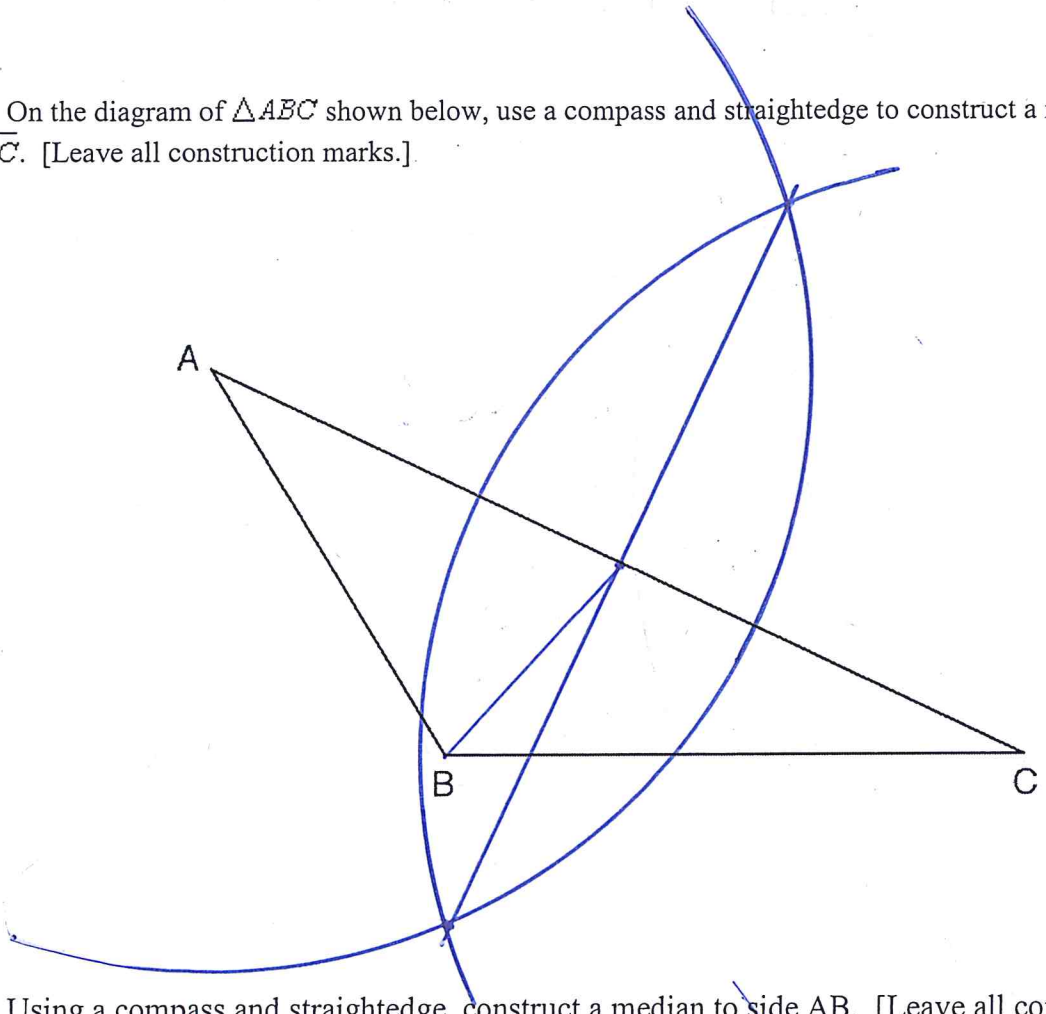
5. On the diagram of $\triangle ABC$ shown below, use a compass and straightedge to construct a median to side $\overline{AC}$. [Leave all construction marks.]



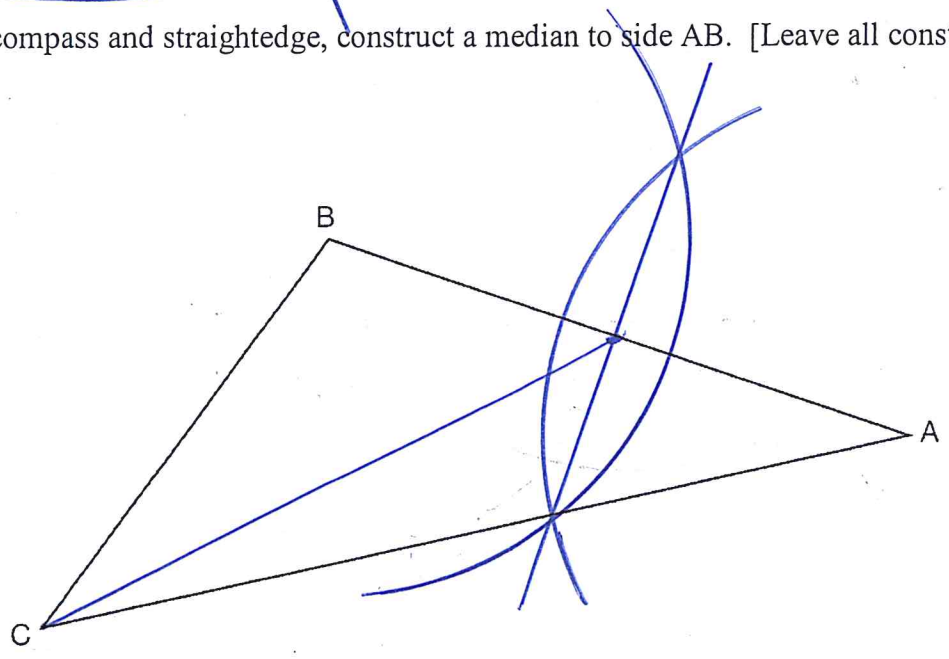

6. Using a compass and straightedge, construct a median to side BC. [Leave all construction marks.]



7. On the diagram of $\triangle ABC$ shown below, use a compass and straightedge to construct a median to side $\overline{AC}$. [Leave all construction marks.]




8. Using a compass and straightedge, construct a median to side AB. [Leave all construction marks.]

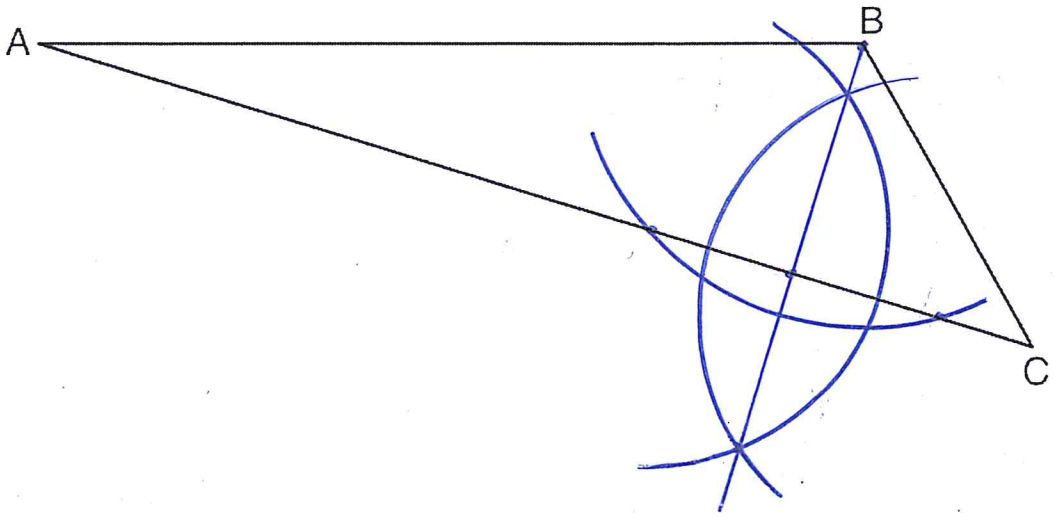


altitude

1) Draw a "smiley face" from the vertex
2) Construct a perpendicular bisector using the points of intersection

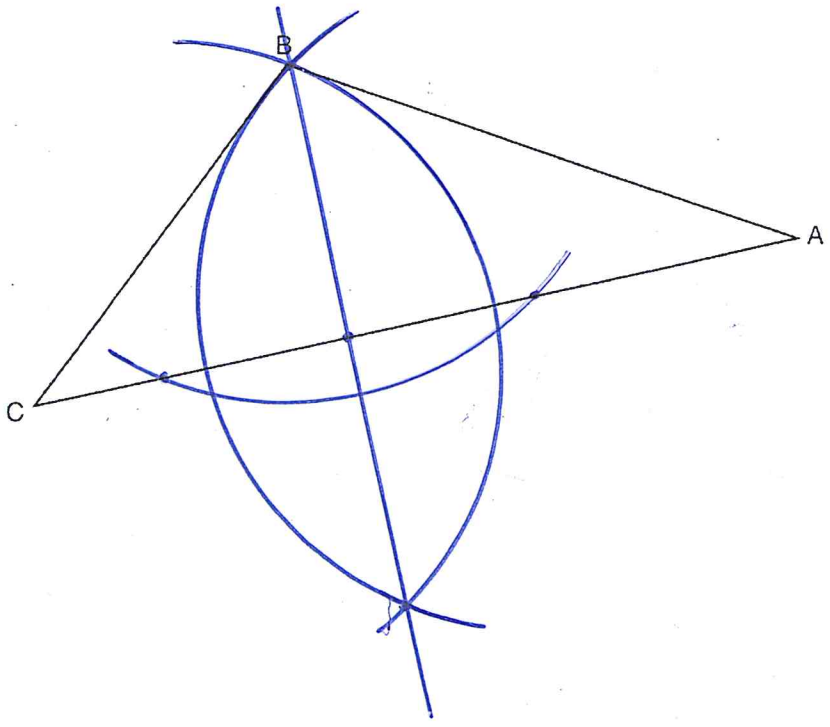
9. On the diagram of $\triangle ABC$ shown below, use a compass and straightedge to construct an altitude from B to side $\overline{AC}$. [Leave all construction marks.]

smiley face

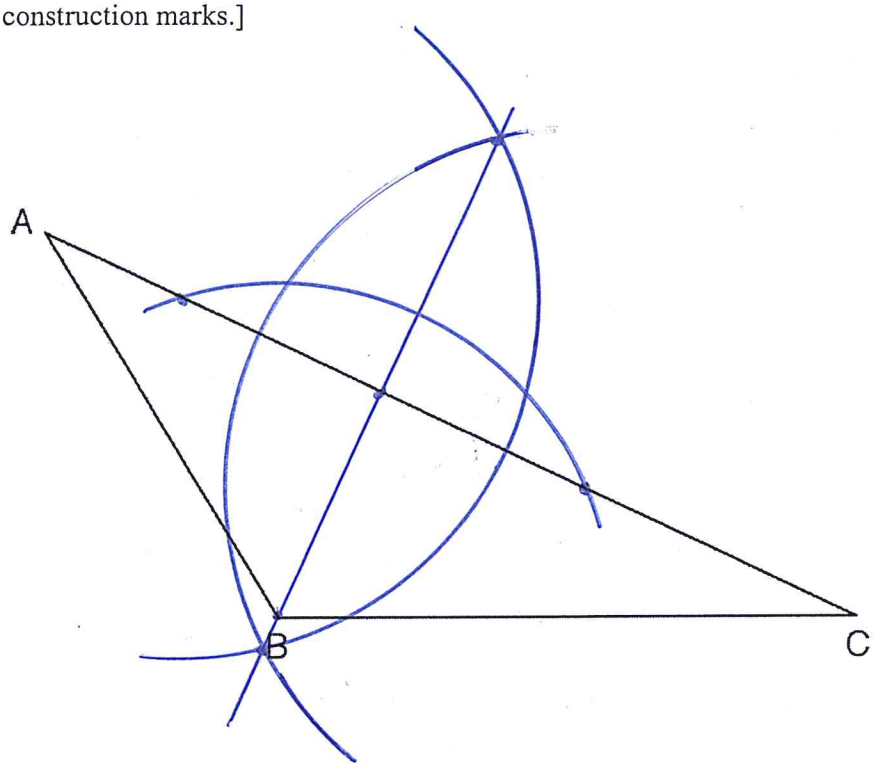



10. Using a compass and straightedge, construct an altitude from B to side AC. [Leave all construction marks.]

smiley face

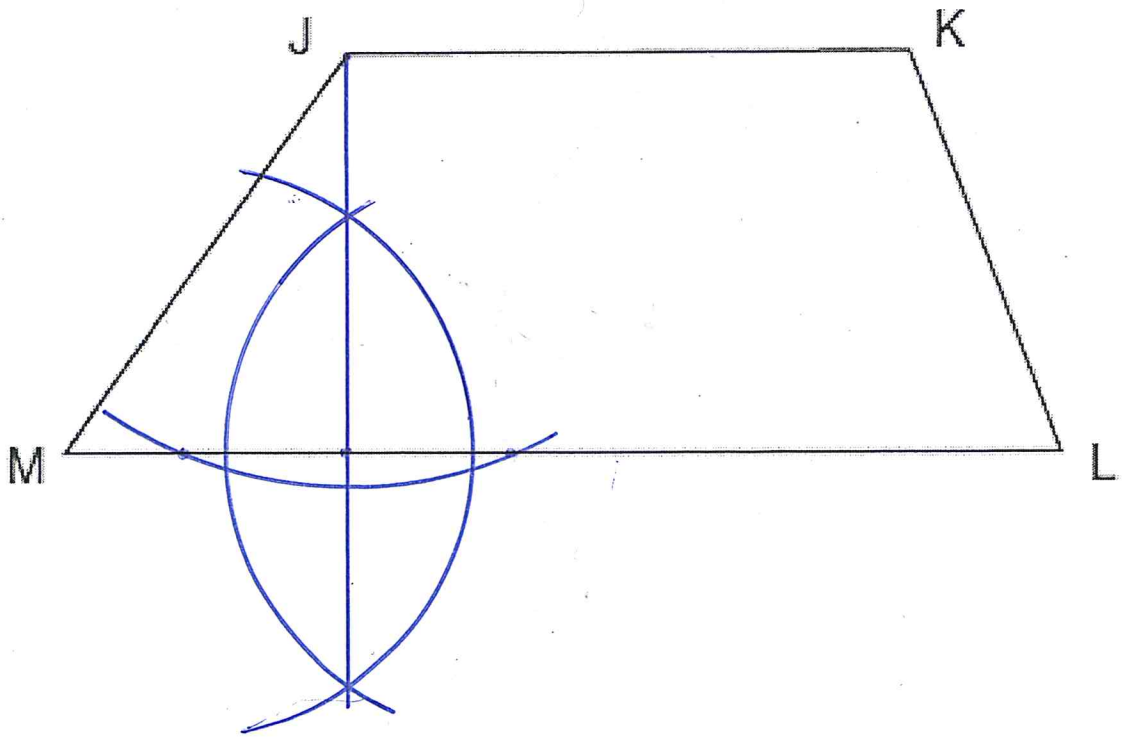


11. On the diagram of $\triangle ABC$ shown below, use a compass and straightedge to construct ~~a median~~ an altitude to side $\overline{AC}$. [Leave all construction marks.]




12. Given: Trapezoid $JKLM$ with $\overline{JK} \parallel \overline{ML}$

Using a compass and straightedge, construct the altitude from vertex $J$ to $\overline{ML}$. [Leave all construction marks.]

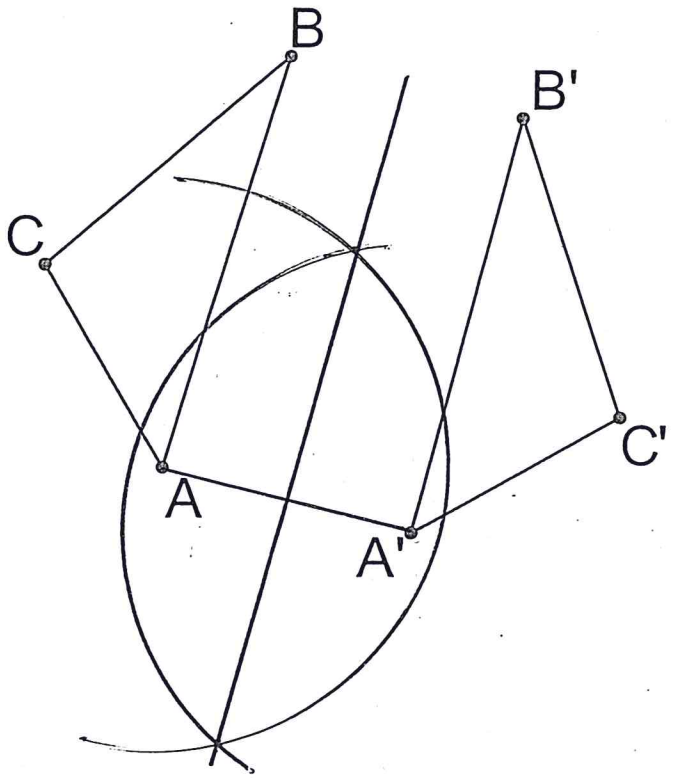


Line of reflection

1) Connect any point to its image
2) Construct a perpendicular bisector of that segment

**Find the line of reflection for each of the following sets of diagrams**

13.

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