

Geometry: Constructions

Name: _____

A "Construction" is a geometric drawing that is made using a limited number of tools, usually only a compass and straightedge (or ruler). Look on the following pages in your textbook and **follow the instructions** to complete the construction given on that page. Remember that you can only use a compass and straightedge!

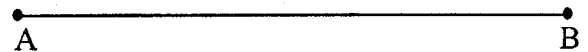
1) Before you begin, use this first square to get used to the compass. Create a drawing here using a compass:

2) Segment Bisector (p.34) *Please note that you DO NOT erase your "construction marks" after completing a construction!*

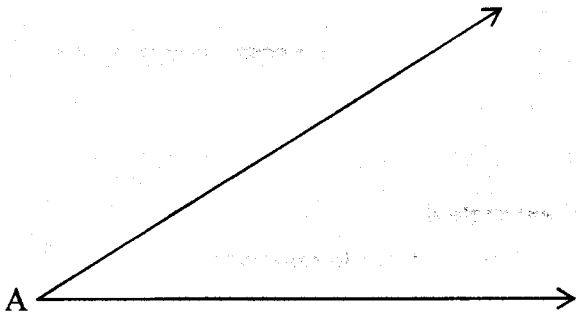


3) Angle Bisector (p. 36) This time YOU draw the starting angle...then bisect it. *Remember to leave your construction marks!*

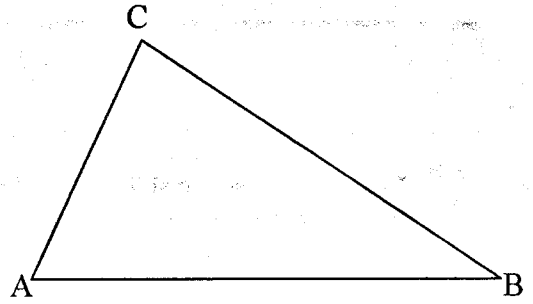
4) Copy a Segment (pg. 104)



5) Copy an Angle (top p.159)



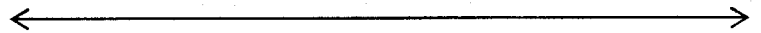
6) Copy a Triangle (p. 213)



7) Parallel Lines (bottom p. 159)

8) A Perpendicular to a Line (through a point)
(p. 130)

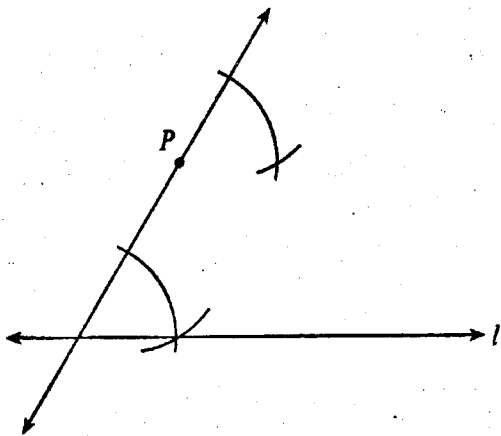
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Released Test Questions

Geometry

Marsha is using a straightedge and compass to do the construction shown below.

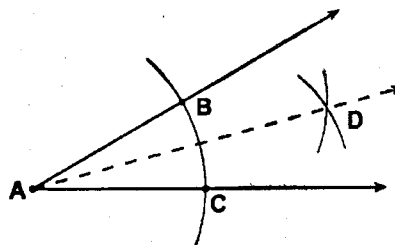


Which *best* describes the construction Marsha is doing?

- A a line through P parallel to line l
- B a line through P intersecting line l
- C a line through P congruent to line l
- D a line through P perpendicular to line l

Given: angle A

What is the first step in constructing the angle bisector of angle A ?



- A Draw ray \overline{AD} .
- B Draw a line segment connecting points B and C .
- C From points B and C , draw equal arcs that intersect at D .
- D From point A , draw an arc that intersects the sides of the angle at points B and C .

Constructions (let the fun times roll©)

1. **Construct a segment bisector and find the midpoint Pg. 34**
 - a. Draw a segment 3-in. long and label it AB.
 - b. Place the compass point at A. Use the compass setting greater than half the length of AB. Draw an arc.
 - c. Keep the same compass setting and place the compass point at B. Draw an arc. (It should intersect the other arc in 2 places.)
 - d. Use a straightedge to draw a segment through the points of intersection. This segment bisects AB at point M, the midpoint of AB.

2. **Angle Bisector Pg. 36**
 - a. Create $\angle C$, a 60° .
 - b. Place the compass point at C. Draw an arc that intersects both sides of the \angle . Label the intersections A & B.
 - c. Place the compass point at A. Draw an arc. Then place the compass point at B. Using the same compass setting, draw another arc.
 - d. Label the intersection D. Use the straightedge to draw a ray through points C and D. This is the angle bisector. Measure it!

3. **Copy a Segment Pg. 104**

- a. Use a straightedge to draw a segment longer than AB . Label the point C on the new segment.
- b. Set your compass at the length of AB .
- c. Place the compass point at C and mark a second point, D , on the new segment CD is congruent to AB .



3. **Constructing a Perpendicular to a line Pg. 130**

- a. Place the compass point at P and draw an arc that intersects line l twice. Label the intersections A and B .
- b. Draw an arc with center A using the same radius, draw an arc, with center B . Label the intersection of the arcs Q .
- c. Use a straightedge to draw PQ . $PQ \perp l$.

5. **Copying an Angle Pg. 159**

- a. Draw a line. Label a point on the line D .
- b. Draw an arc with center A . Label B and C with the same radius, draw an arc with center D . Label E .
- c. Draw an arc with radius BC and center E . Label the intersection F .
- d. Draw DF , $\angle EDF \cong \angle BAC$.