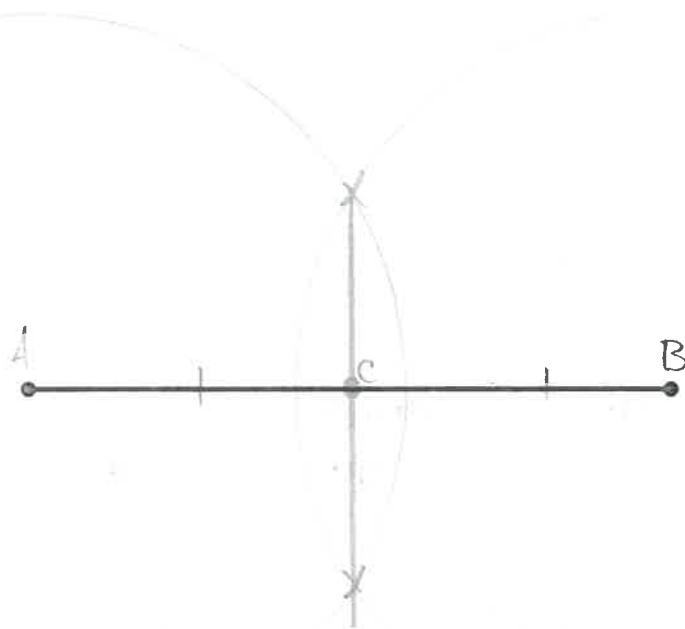


2.1.2: Constructing Angles

Construction in geometry means to draw shapes, angles or lines accurately. These constructions use only compass, straightedge and a rubber pencil.

Bisecting a line segment

1. Place the Compass at one end of line segment.
2. Adjust compass to slightly more than half of the line segment.
3. Draw arcs above and below the line from one end.
4. Repeat from other end.
5. Place a point where the arcs cross and draw a line.



AC is congruent to BC

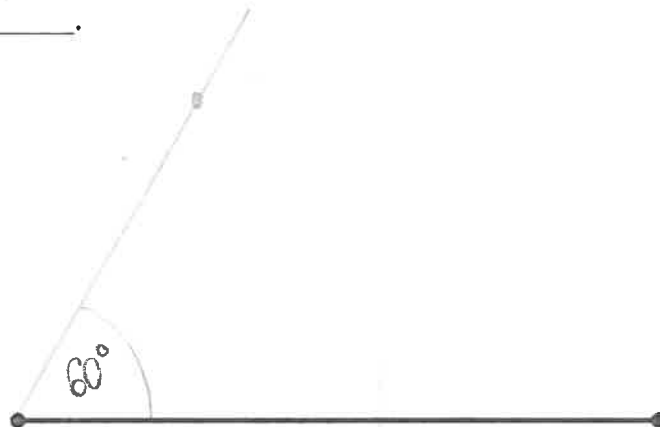
Bisecting an angle

1. Place the Compass at the vertex of the angle.
2. Draw arcs on each ray of the angle.
3. Without adjusting the compass, draw an arc between the rays of the angle from the point where the first arc crosses the ray.
4. Repeat from the other intersection.
5. Place a point where the arcs cross and draw a line.



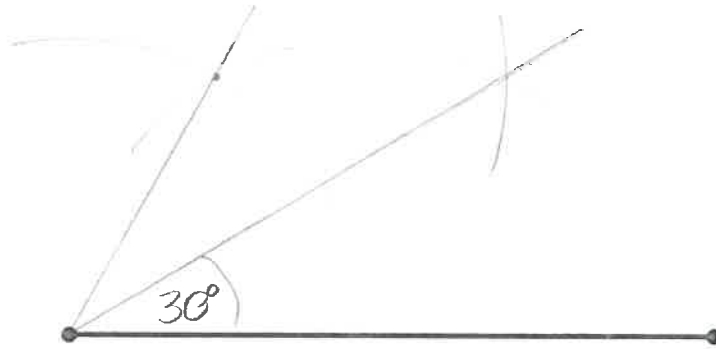
Constructing a 60° angle

1. Start with a line segment.
2. Choose a point and draw a large arc (almost a half circle)
3. Do not adjust compass. From the point made between the arc and line segment, draw another arc that intersects the first arc drawn.
4. Place a point where the arc intersects and draw a line.



Constructing a 30° angle

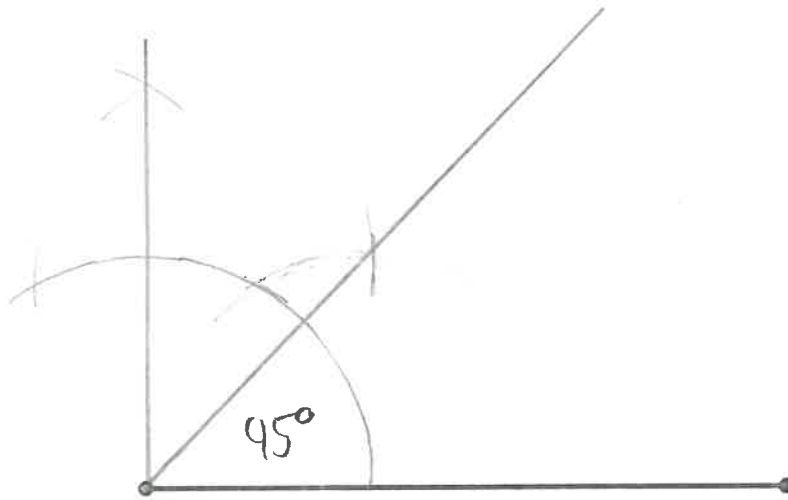
1. Start with a line segment
2. Construct a 60° angle as described previously.
3. Bisect the 60° angle ^{with arcs} as described previously.
4. Mark a point where their arcs intersect.
5. Draw a line from the vertex to the point to make 30°



Constructing a 45° angle

1. Draw a straight segment, then a $\sim \frac{1}{2}$ circle from vertex
2. From arc, + line segment cross arc.
3. From crossed arc in step 3 cross arc again
4. From both points on arc, form a cross section above
5. Draw a line from point A to above cross to form 90° .

6. Bisect 90° .



Which angles can't we draw this way?

What is a limitation to drawing angles?

Constructing Angles w/s