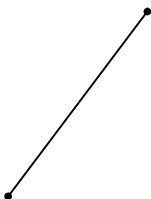
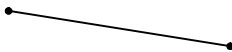
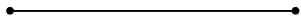
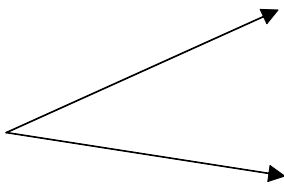
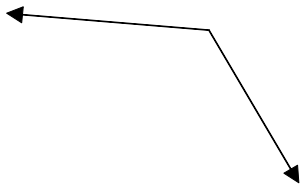
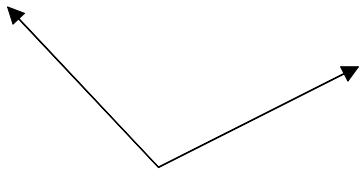
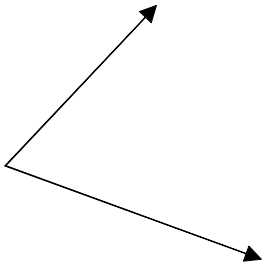


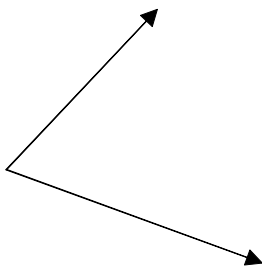
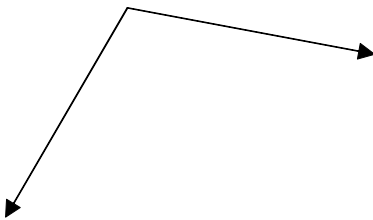
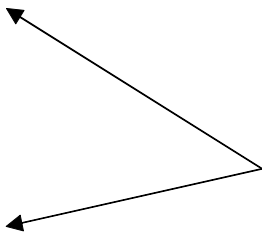
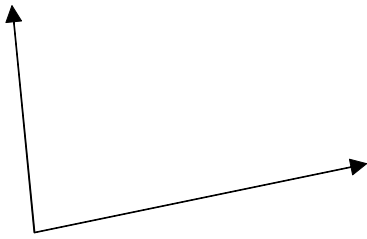
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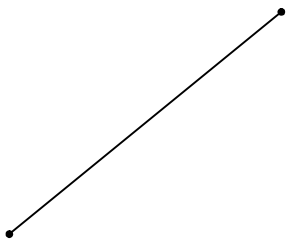
Copy the angles below.



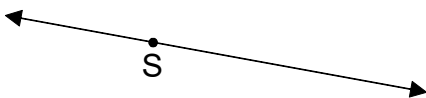
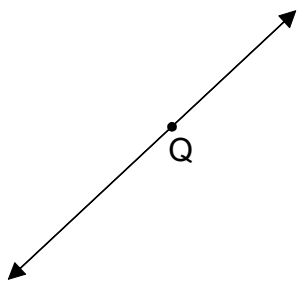
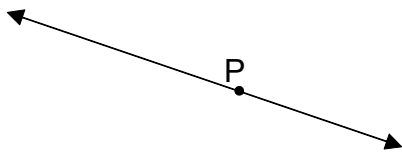
Construct bisectors of each of the angles below.



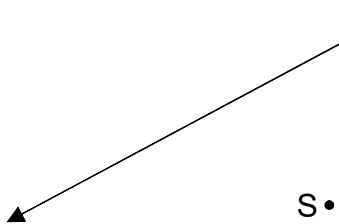
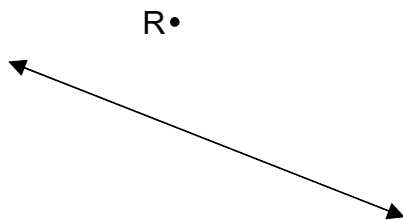
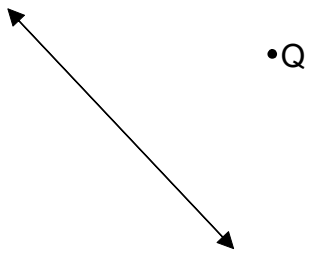
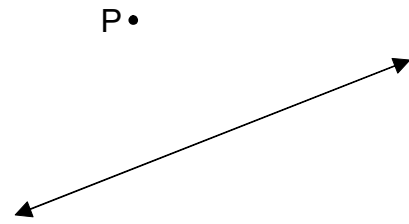
Draw perpendicular bisectors of each of the following segments.



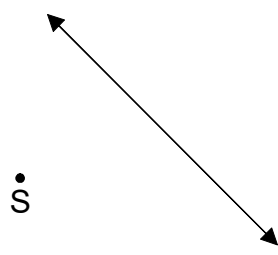
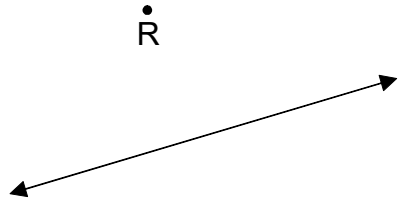
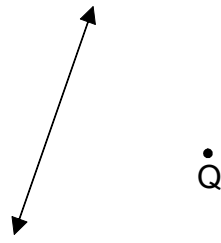
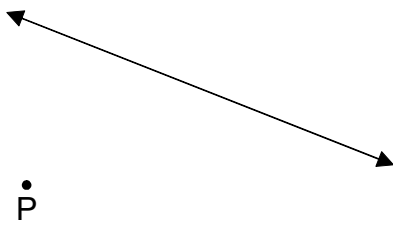
Draw lines that are perpendicular to the given lines and pass through the given points.



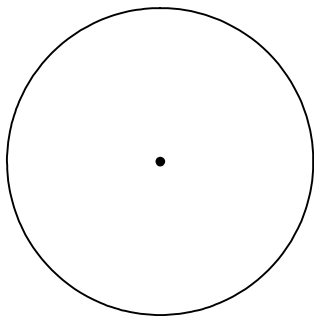
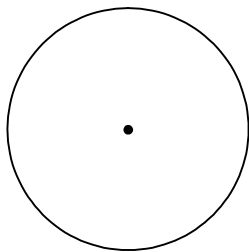
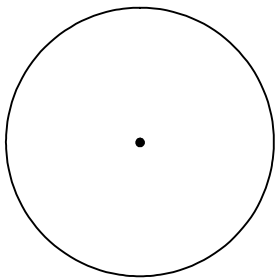
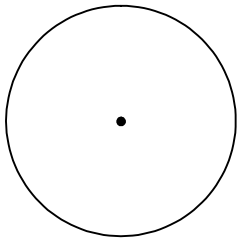
Draw lines that are perpendicular to the given lines and pass through the given points.



Draw lines that are parallel to the given lines and pass through the given points.

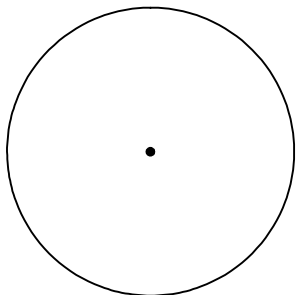
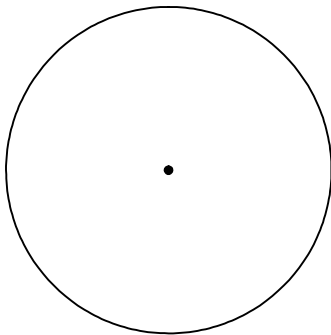
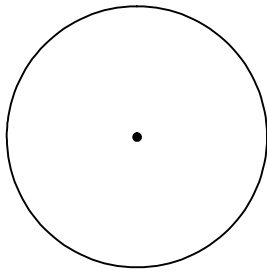
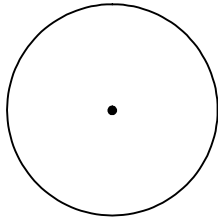


Construct regular hexagons inscribed in the circles below.

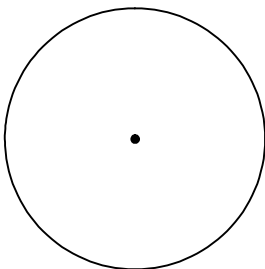
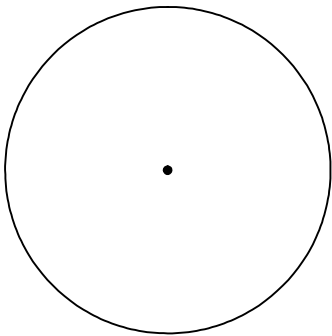
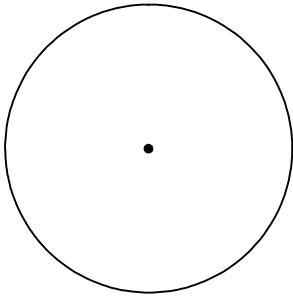
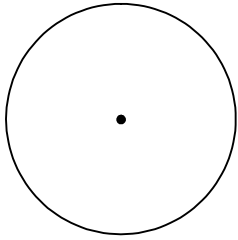




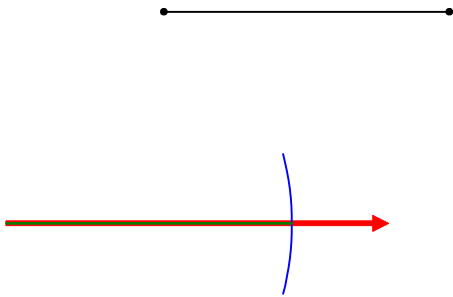
Construct equilateral triangles inscribed in the circles below.



Draw squares inscribed in the circles below.



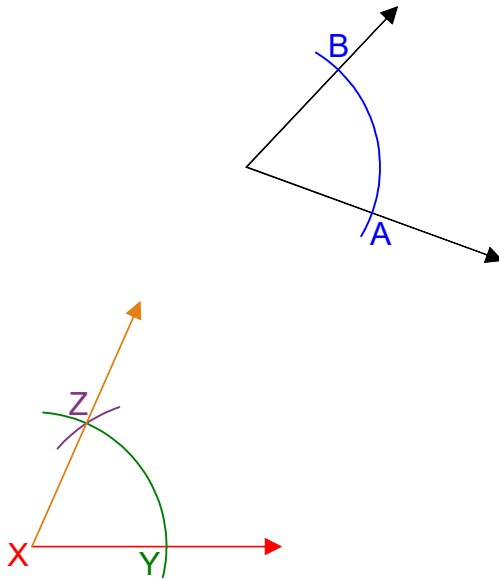
**COPY A SEGMENT (IN OTHER WORDS, CONSTRUCT A SEGMENT THAT HAS THE SAME LENGTH AS A GIVEN SEGMENT)**



Steps:

1. Draw an initial ray.
2. Place the compass point on one of the endpoints of the original segment, and open the compass so that the width of the opening matches the length of the segment.
3. Without changing the opening of the compass, place the compass point on the endpoint of the new segment and then make an arc that intersects your initial ray.
4. The distance between the endpoint of your initial ray and the the arc from Step 3 will be the same as the distance between the endpoints of your initial segment.

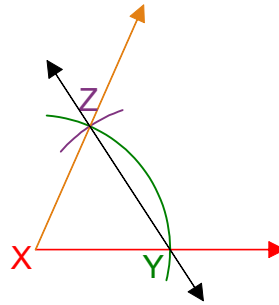
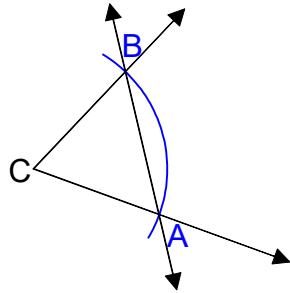
**COPY AN ANGLE (IN OTHER WORDS, CONSTRUCT AN ANGLE THAT IS CONGRUENT TO A GIVEN ANGLE)**



Steps:

1. Draw an initial ray. Label the endpoint of the ray point X.
2. Place the compass point at the vertex of the original angle and make an arc that intersects both sides of the angle. Label the points where this arc intersects the sides of the angle points A and B.
3. Without changing the opening of the compass, place the compass point at the endpoint of the ray from Step 1, and then make an arc. Label the point where this arc intersects your ray from Step 1 point Y.
4. Place the compass point on point A and open the compass so that the pencil touches point B.
5. Without changing the width of the opening of the compass, place the compass point on point Y and make an arc that intersects the arc you made in Step 3. Label the point where these two arcs intersect point Z.
6. Draw  $\overrightarrow{XZ}$ .

Before we can prove that these two angles are congruent, we have to use the postulate *Through any two points there is exactly one line* to draw  $\overleftrightarrow{AB}$  and  $\overleftrightarrow{YZ}$ .

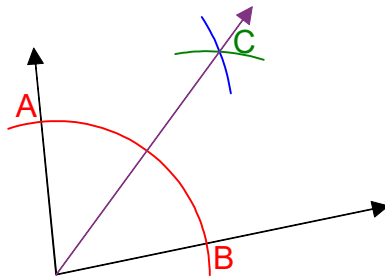


Given:  $\overline{CA} \cong \overline{XY}$ ,  $\overline{CB} \cong \overline{XZ}$ , and  $\overline{AB} \cong \overline{YZ}$

Prove:  $\angle BCA \cong \angle ZXY$

Statements	Reasons
1. $\overline{CA} \cong \overline{XY}$ , $\overline{CB} \cong \overline{XZ}$ , and $\overline{AB} \cong \overline{YZ}$	1. Given
2. $\triangle CAB \cong \triangle XYZ$	2. SSS Congruence Postulate
3. $\angle BCA \cong \angle ZXY$	3. CPCTC

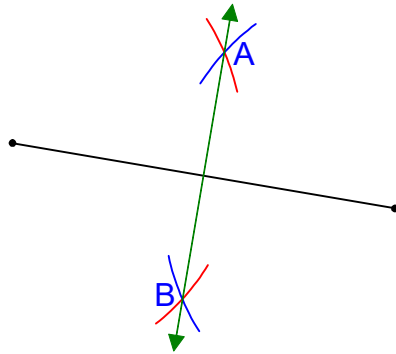
## CONSTRUCT AN ANGLE BISECTOR



Steps:

1. Place the compass point on the vertex of the angle, and draw an arc that intersects both sides of the angle. Label the points where this arc intersects the sides of the angle points A and B.
2. Open the compass so that the width of the opening is more than half the width of the angle.
3. Place the compass point on point A, and make an arc in the interior of the angle.
4. Without changing the opening of the compass, place the compass point on point B, and make an arc in the interior of the angle. Label the point where this arc intersects the arc from Step 3 point C.
5. Draw a ray that connects the vertex of the angle and point C.

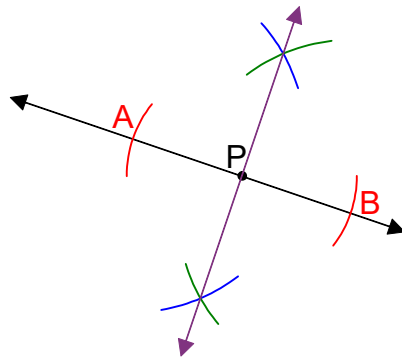
## CONSTRUCT A PERPENDICULAR BISECTOR OF A SEGMENT



Steps:

1. Open the compass so that the width of the compass is more than half the length of the segment.
2. Place the compass point at one of the endpoints of the segment, and make arcs above and below the segment.
3. Place the compass point at the other endpoint of the segment, and make arcs above and below the segment. Label the points where these arcs intersect the arcs from Step 2 points A and B.
4. Draw a line, segment, or ray that connects points A and B.

## DRAW A LINE PERPENDICULAR TO A LINE THROUGH A POINT ON THE LINE

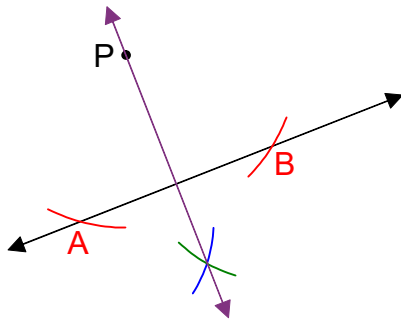


Steps:

1. Place the compass point on point P, and make arcs that intersect the line on both sides of P. Label the points where these arcs intersect the line points A and B.
2. Open the compass so that the width is more than half the length of  $\overline{AB}$ .
3. Place the compass point at point A, and make arcs above and below the line.
4. Place the compass point at point B, and make arcs above and below the line.
5. Draw a line that connects the points where the arcs from Step 3 intersect the arcs from Step 4.



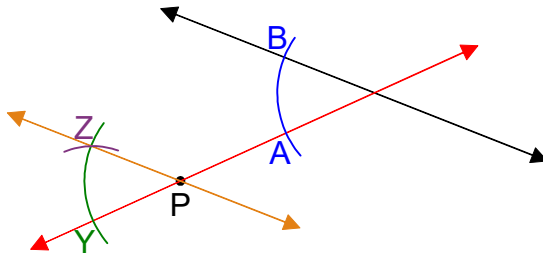
## DRAW A LINE PERPENDICULAR TO A SEGMENT THROUGH A POINT NOT ON THE LINE



Steps:

1. Place the compass point on the point P, and make arcs that intersect the line. Label the points where these arcs intersect the line points A and B.
2. Open the compass so that the width is more than half the length of  $\overline{AB}$ .
3. Place the compass point on point A, and make an arc on the side of the line opposite the side of the line with point P.
4. Without changing the opening of the compass, place the compass point on point B and make an arc that intersects the arc from Step 3.
5. Draw a line that connects point P and the intersection of the arcs from Steps 3 and 4.

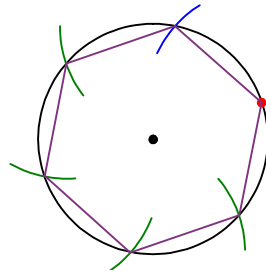
## CONSTRUCT A LINE PARALLEL TO ANOTHER LINE THROUGH A GIVEN POINT



Steps:

1. Draw a line that passes through point P and intersects the line.
2. Place the compass point at the point where the line from Step 1 intersects the original line, and draw an arc that intersects both lines. Label the points of intersection A and B.
3. Without changing the opening of the compass, place the compass point on point P, and then make an arc. Label the point where this arc intersects the line from Step 1 point Y.
4. Place the compass point on point A and open the compass so that the pencil touches point B.
5. Without changing the width of the opening of the compass, place the compass point on point Y and make an arc that intersects the arc you made in Step 3. Make sure that this arc is on the same side of the transversal as point B. Label the point of intersection point Z.
6. Draw  $\overleftrightarrow{PZ}$ .

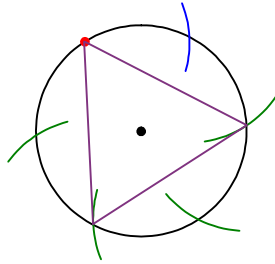
## CONSTRUCT A REGULAR HEXAGON INSCRIBED IN A CIRCLE



Steps:

1. Place the compass point on the center, and open the compass so that the pencil touches a point on the circle.
2. Make an initial point on the circle.
3. Without changing the width of the opening of the compass, place the compass point on the point from Step 2, and then make an arc that intersects the circle.
4. Without changing the width of the opening of the compass, place the compass point where the arc from Step 3 intersects the circle, and then make another arc that intersects the circle. Then continue this process until you have gone all the way around the circle.
5. Construct the hexagon by connecting the points where the point from Step 2 and the arcs from Steps 3 and 4 intersect the circle.

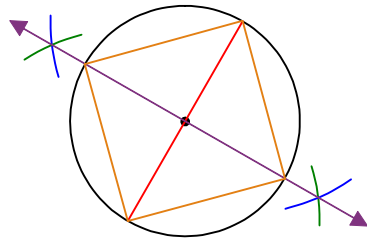
## CONSTRUCT AN EQUILATERAL TRIANGLE INSCRIBED IN A CIRCLE



Steps:

1. Place the compass point on the center, and open the compass so that the pencil touches a point on the circle.
2. Make an initial point on the circle.
3. Without changing the width of the opening of the compass, place the compass point on the point from Step 2, and then make an arc that intersects the circle.
4. Without changing the width of the opening of the compass, place the compass point where the arc from Step 3 intersects the circle, and then make another arc that intersects the circle. Then continue this process until you have gone all the way around the circle.
5. Construct the triangle by connecting the points where the point from Step 2 and every other arc from Steps 3 and 4 intersect the circle.

## CONSTRUCT A SQUARE INSCRIBED IN A CIRCLE



Steps:

1. Draw a diameter of the circle.
2. Open the compass so that the width is more than the radius of the circle.
3. Place the compass point at one of the endpoints of the diameter that you drew in Step 1, and make arcs on both sides of the diameter.
4. Place the compass point at the other endpoint of the diameter that you drew in Step 1, and make arcs on both sides of the diameter.
5. Draw a line that connects the points where the arcs from Steps 3 and 4 intersect each other.
6. Construct the square by connecting the points where the diameters intersect the circle.