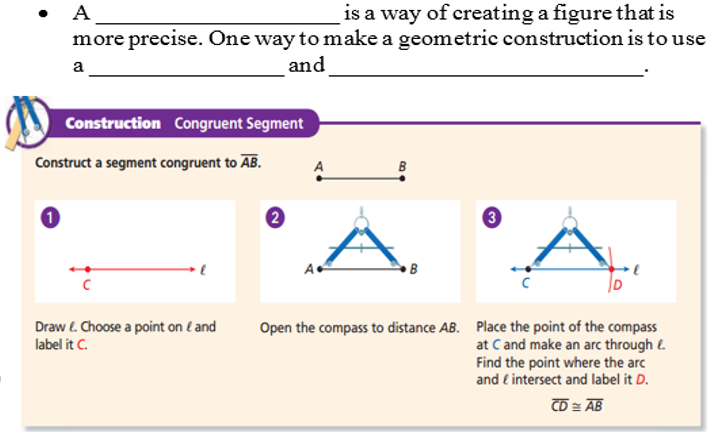
***Constructions in Geometry***

**Units 2 and 4**

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Constructions of Lines and Angles**



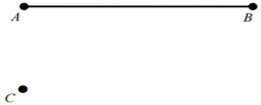
**construction**

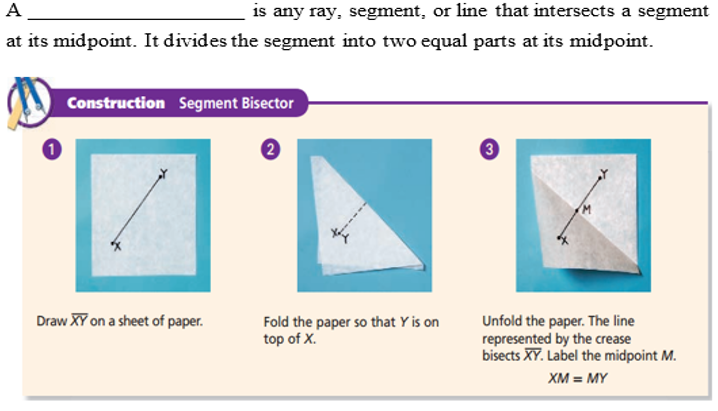
**straightedge**

**compass**

**Example 1**

Construct a segment with an endpoint C and congruent to the segment AB.



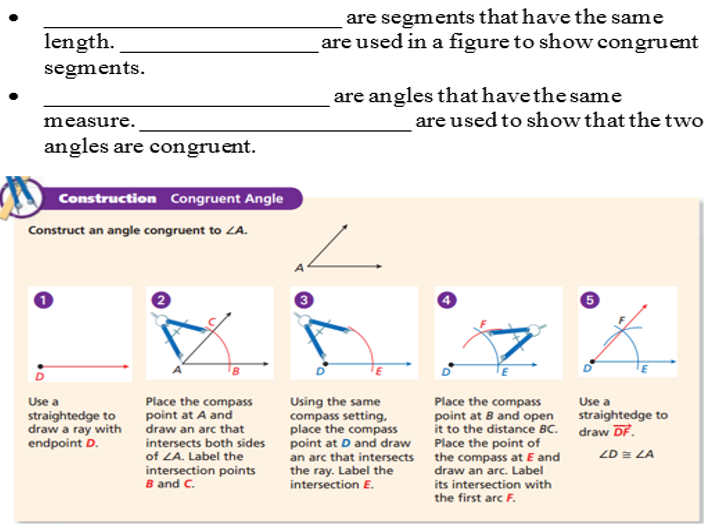


**segment bisector**

**Example 2**

Using patty paper, construct the segment bisector of CD.





**Arc marks**

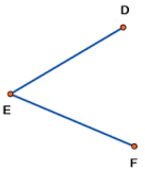
**Congruent angles**

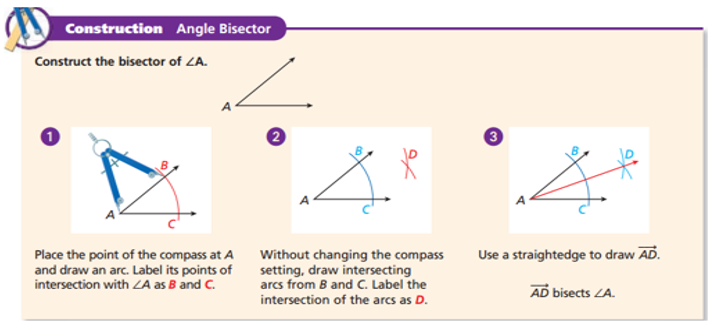
**Congruent segments**

**Tick marks**

**Example 3**

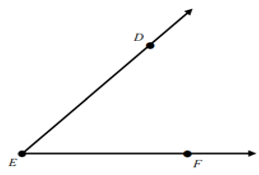
Construct a congruent angle, and label it with points G, H, and I.

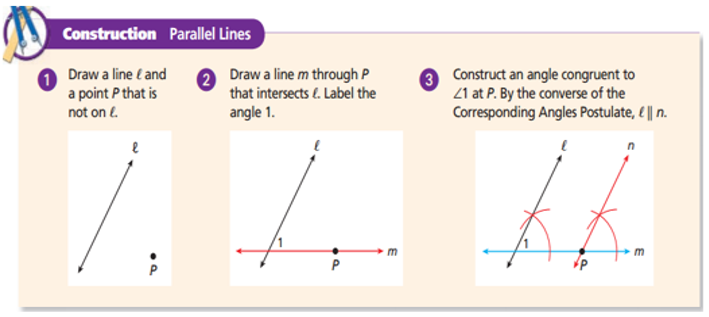




**Example 4**

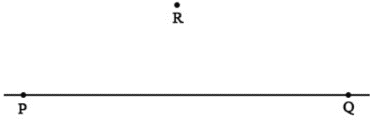
Construct an angle bisector.

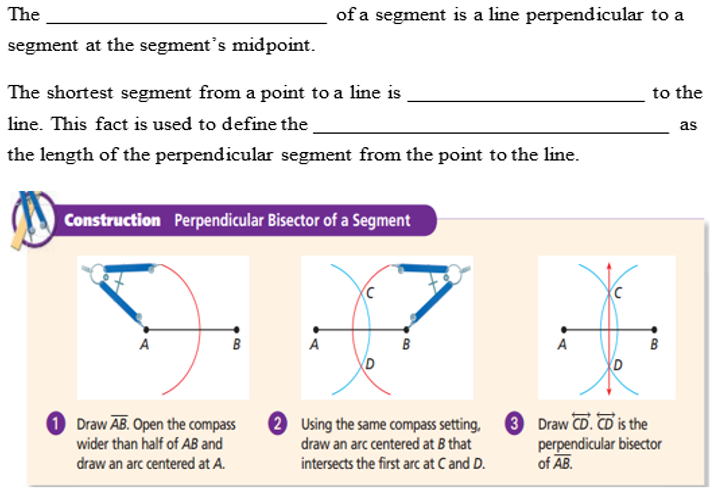




**Example 5**

Construct a parallel line.





**distance from a point on a line**

**perpendicular**

**perpendicular bisector**

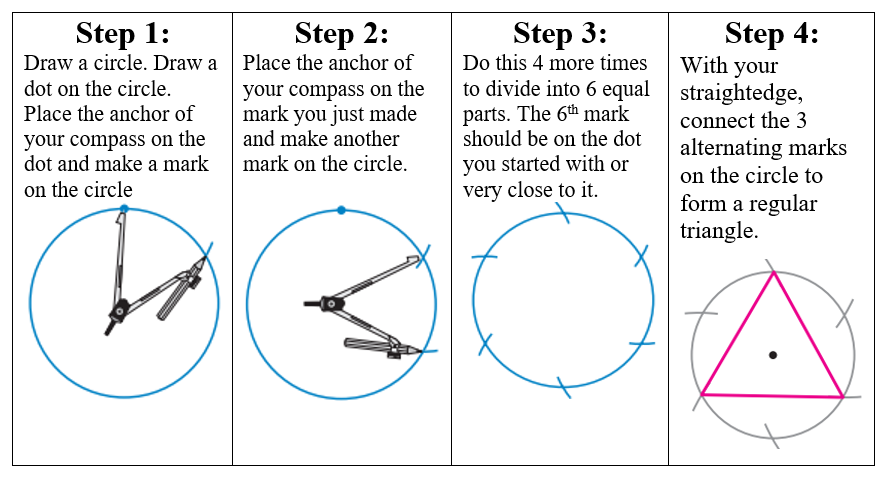
**Example 6**

Construct perpendicular line.



**Construction of Polygons**

* A **regular polygon** is a polygon that is **equiangular** and **equilateral**. This means that all its **angles** are the same measure and all its **sides** are the same length.
* The most basic example of a regular polygon is an **equilateral triangle**, a triangle with three sides and angles that are **congruent**.

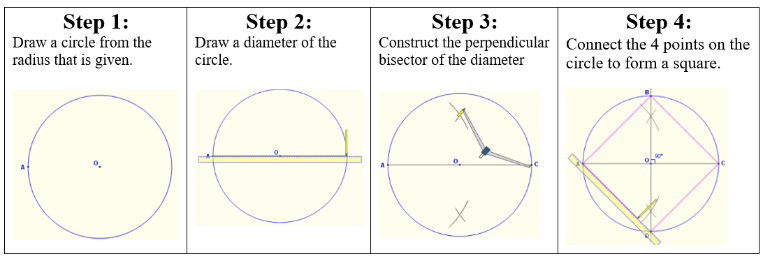
**Example 1: Triangle Inscribed in a Circle**

Construct a Triangle Inscribed in a Circle.



* **Squares** are also regular polygons, because all their angles are the same **900** and all their sides are the same length.

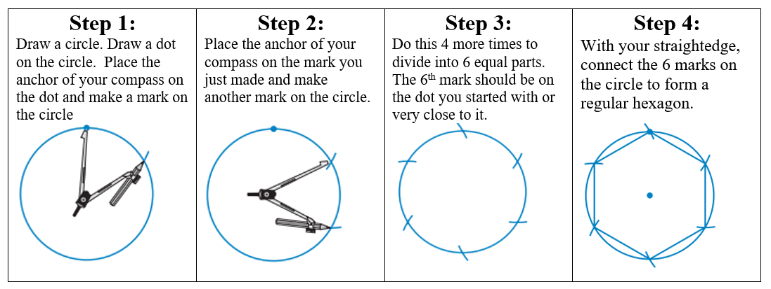
**Example 2: Square Inscribed in a Circle**



Construct a Square Inscribed in a Circle.



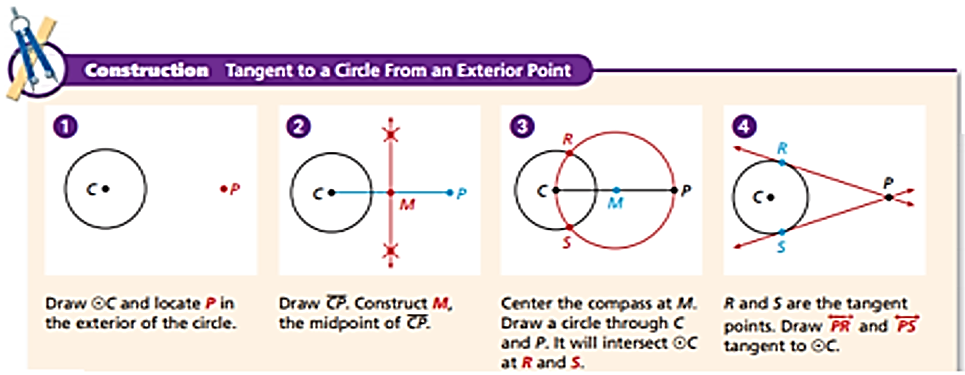
* A regular **hexagon** is a 6 sided polygon whose angles are all the same measure and sides are all the same length. The hexagon is **inscribed** in the circle because each **vertex** of the hexagon is on the circle.

**Example 3: Hexagon Inscribed in a Circle**

Construct a Hexagon Inscribed in a Circle.

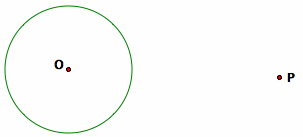


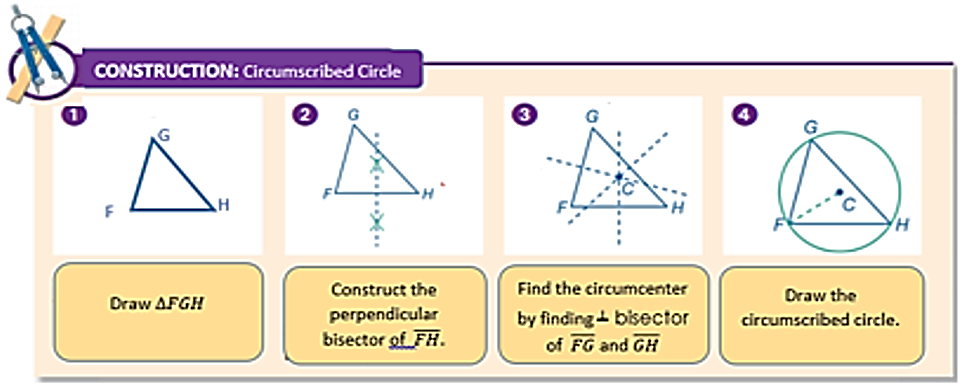
**Constructions of Tangents, Circumscribed and Inscribed Circles**



**Example 1**

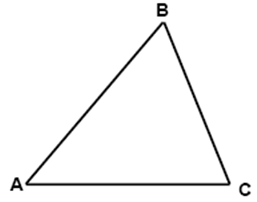
Construct a Tangent to a Circle for an Exterior Point

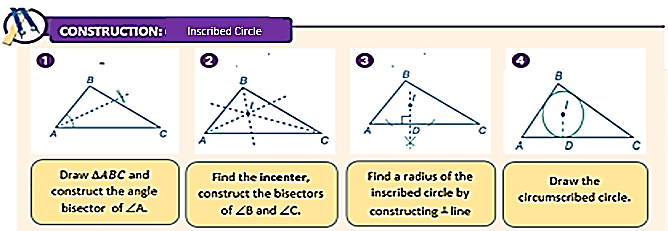




**Example 2**

Construct a Circumscribed Circle of a triangle.





**Example 4**

Construct the inscribed circle of a triangle.

