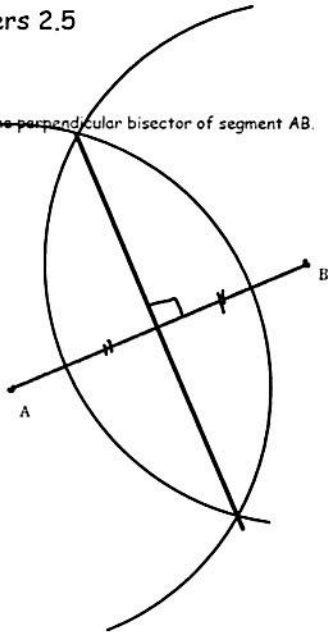
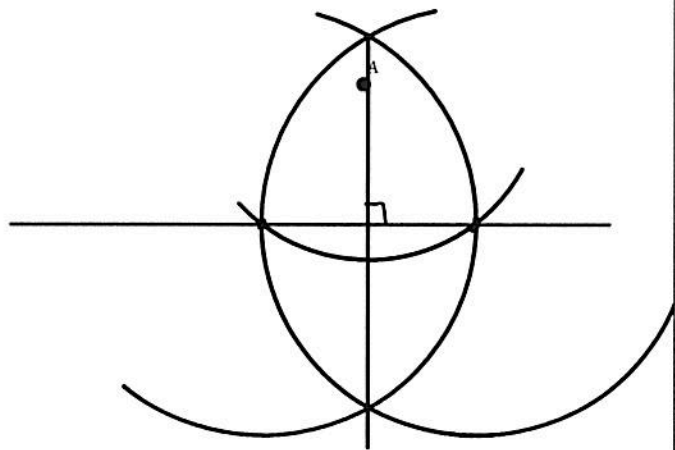


HW Answers 2.5

1) Construct the perpendicular bisector of segment AB.



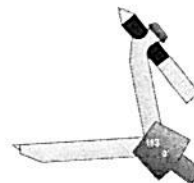
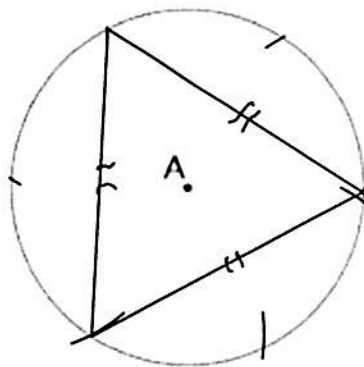
2) Construct a line perpendicular to line l through point A.



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Construct an Equilateral Triangle Inscribed in a Circle.

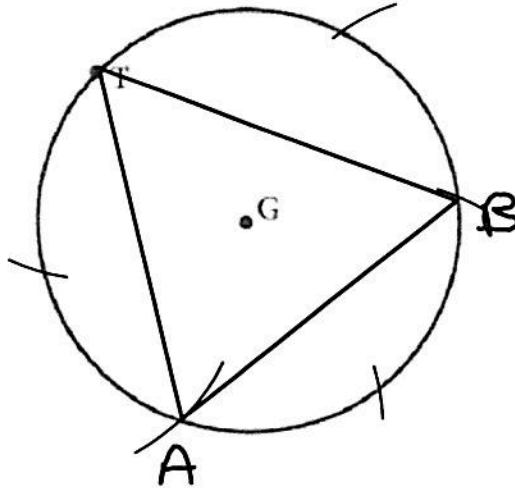
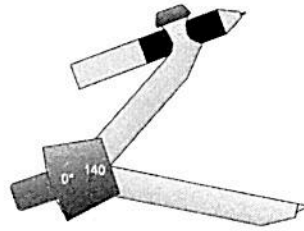
- Construct a circle. (Remember to keep the setting you used.)
- Mark a point on the circle. Starting at this point mark off arcs equal to the radius of the circle you constructed. (In other words, use the setting you kept from the first step.)
- Connect every other point with a straight edge to construct the equilateral triangle.



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Practice:

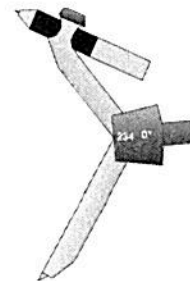
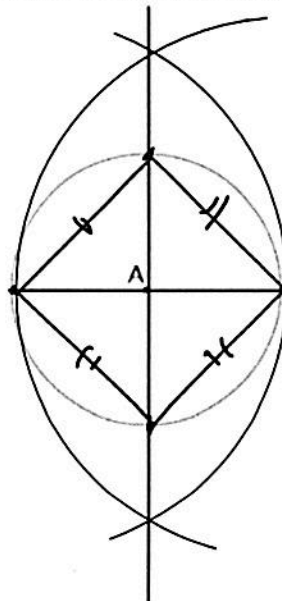
26. Jason and Michele are designing a circular garden, G , shown to the right. They have three decorative stones they want to place on the perimeter of the garden equidistant from each other, forming an equilateral triangle. If they place one of the stones at T , where should the other two stones be placed? Label these points A and B . Use a construction to solve and show all construction lines.



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Construct a Square Inscribed in a Circle.

- Mark a point on your paper that will become the center of your circle.
- Construct a circle using the point from the step above as your center.
- Draw in the diameter of the circle
- Construct the perpendicular bisector of the diameter.
- Connect the four points on the circle to form a square.



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Practice: 35. Janie was given an assignment by her art teacher to be the "student of the day" and teach the class how to create a square frame inside a circular metal frame with a diameter of 25 inches. To teach the method she will make a scale drawing of the plan first and explain exactly how she created it by using constructions that she and her classmates learned in their geometry class. Explain how Janie knows it is a square. Show the calculations Janie could use and find the area of the square.

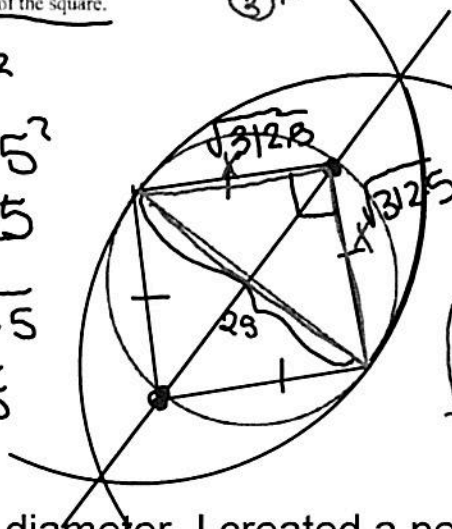
$$a^2 + b^2 = c^2$$

$$x^2 + x^2 = 25^2$$

$$\frac{2x^2}{2} = \frac{625}{2}$$

$$\sqrt{x^2} = \sqrt{312.5}$$

$$x = \sqrt{312.5}$$



$$d = 25 \text{ in}$$

$$A = s^2$$

$$A = (\sqrt{312.5})^2$$

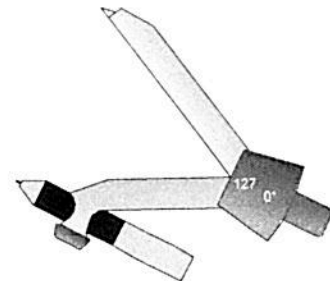
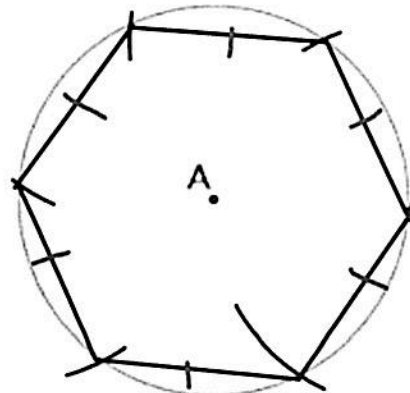
$$A = 312.5 \text{ in}^2$$

Using the diameter, I created a perpendicular bisector. Using the points along the perpendicular line that intersects the circle, I connected the four points to create the square.

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Construct a Regular Hexagon Inscribed in a Circle.

- Construct a circle. (Remember to keep the setting you used.)
- Mark a point on the circle. Starting at this point mark off arcs equal to the radius of the circle you constructed. (In other words, use the setting you kept from the first step.)
- Connect every point to the next point in order with a straight edge to construct the equilateral triangle.



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