

## Bell Ringer

### Construct Triangles

1. Construct an Isosceles Triangle with one side length congruent to segment AB.



2. Construct an Equilateral Triangle with side lengths congruent to segment AB.



3. Evaluate  $y = 2(4)^x$  when  $x = -1, 0$  and  $1$ .

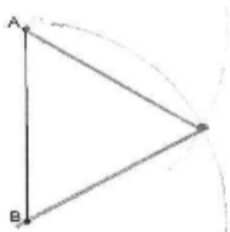
## Solutions

### Construct Triangles

1. Construct an Isosceles Triangle with one side length congruent to segment AB.



2. Construct an Equilateral Triangle with side lengths congruent to segment AB.



3. Evaluate  $y = 2(4)^x$  when  $x = -1, 0$  and  $1$ .

$\frac{1}{2}, 2, 8$

$$2(4)^{-1} = \frac{2}{4} = \frac{1}{2}$$

$$2(4)^0 = 2(1) = 2$$

$$2(4)^1 = 2 \cdot 4 = 8$$

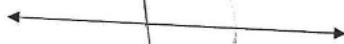
Correct 7D Parallel Lines ws

Name KEY Hour \_\_\_\_\_ 7D - Constructing Parallel Lines

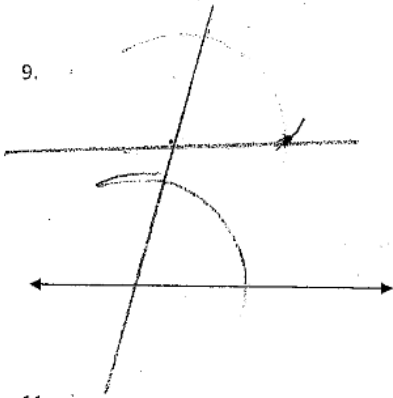
Do at least 8

Constructing Parallel lines through a given point

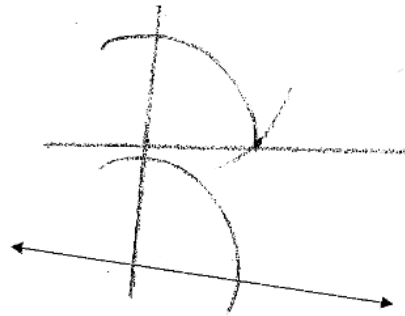
Construct a line parallel to the given line and passes through the given point.



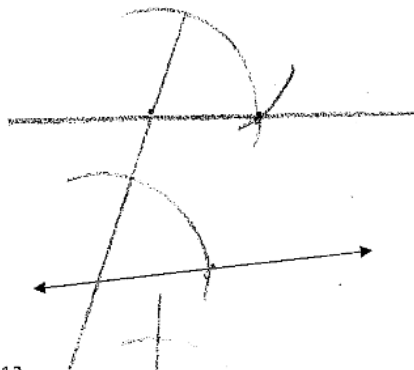
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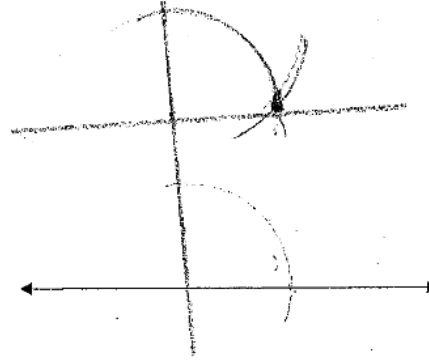
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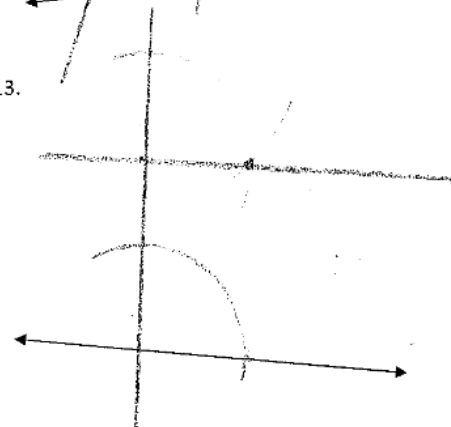
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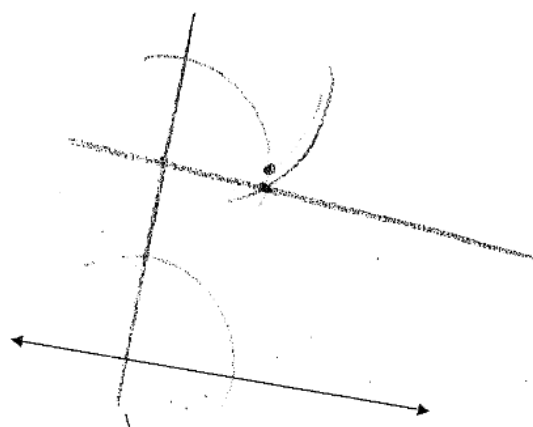
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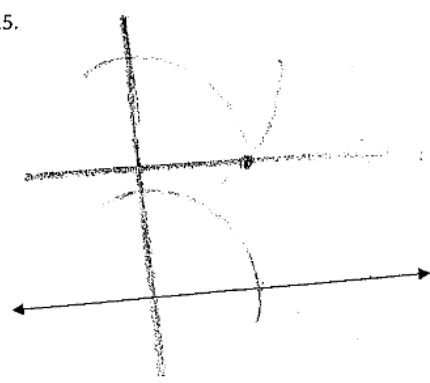
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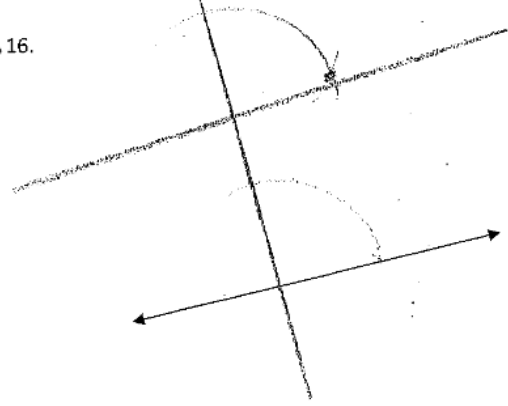
14.



15.



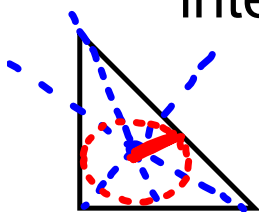
16.



due tomorrow:

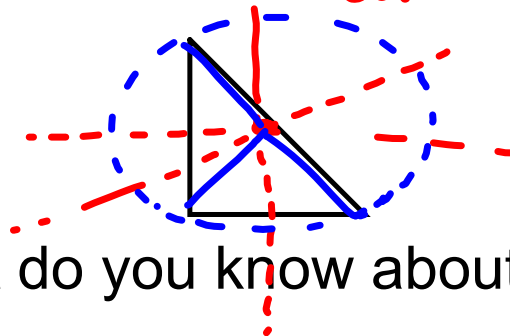
7E Equilateral and Isosceles Triangles ws

The angle bisectors of a triangle intersect at the incenter



What do you know about this point?

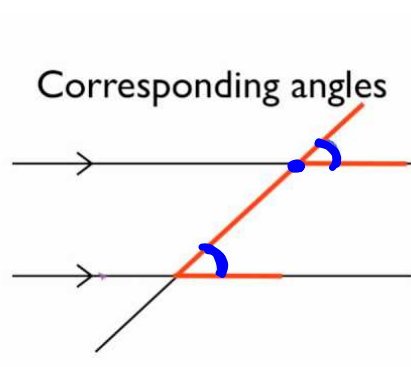
The perpendicular bisectors of a triangle intersect at the Circumcenter



What do you know about this point?



When you construct two parallel lines, how do you know they are parallel??



Corresp.  $\angle$ s are  $\cong$

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## Construct a regular Hexagon in a Circle

**Start:** Start with a center point O, draw a circle.

**Step 1:** Mark a point anywhere on the circle. This will be the first vertex of the hexagon.

**Step 2:** Set the compass on this point and set the compass to the radius of the circle. The compass is placed on the center of the circle.

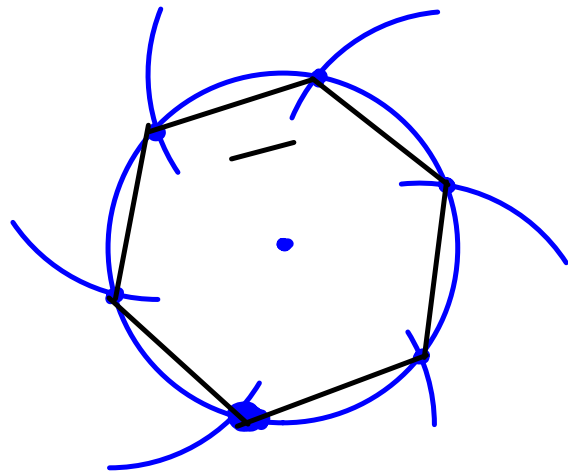
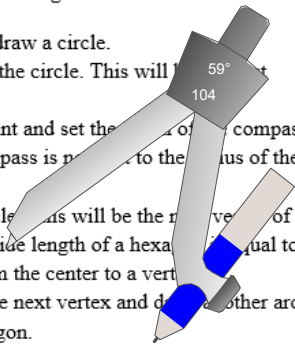
**Step 3:** Make an arc across the circle. This will be the next vertex of the hexagon. (It turns out that the side length of a hexagon is equal to its circumradius – the distance from the center to a vertex.)

**Step 4:** Move the compass on to the next vertex and draw another arc. This is the third vertex of the hexagon.

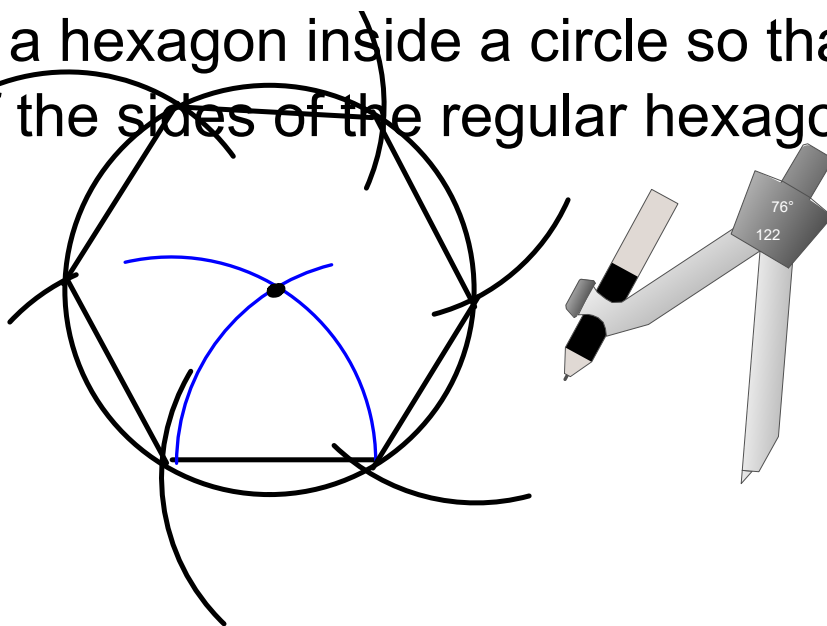
**Step 5:** Continue in this way until you have all six vertices.

**Step 6:** Draw a line between each successive pairs of vertices, a total of 6 lines.

**Done:** These lines form a regular hexagon inscribed in the given circle.



Construct a hexagon inside a circle so that it's  
one of the sides of the regular hexagon



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## Construct a Square

*Start:* Start with line segment  $PQ$  of length  $s$ .

*Step 1:* Extend the line segment past  $Q$ .

*Step 2:* Erect the perpendicular to ray  $QP$  at  $Q$ .

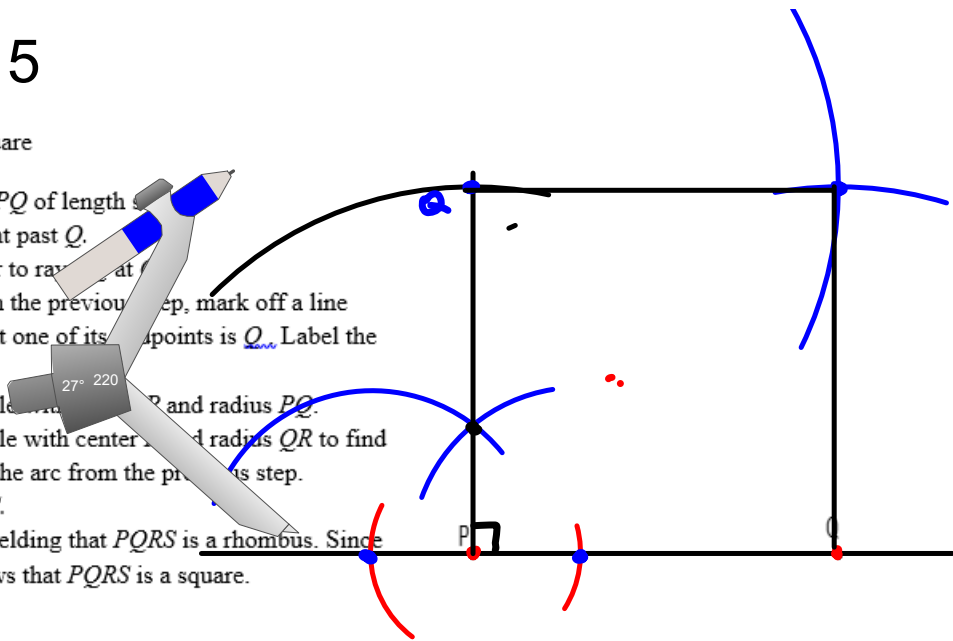
*Step 3:* Using the line drawn in the previous step, mark off a line segment of length  $PQ$  such that one of its endpoints is  $Q$ . Label the other endpoint as  $R$ .

*Step 4:* Draw an arc of the circle with center  $P$  and radius  $PQ$ .

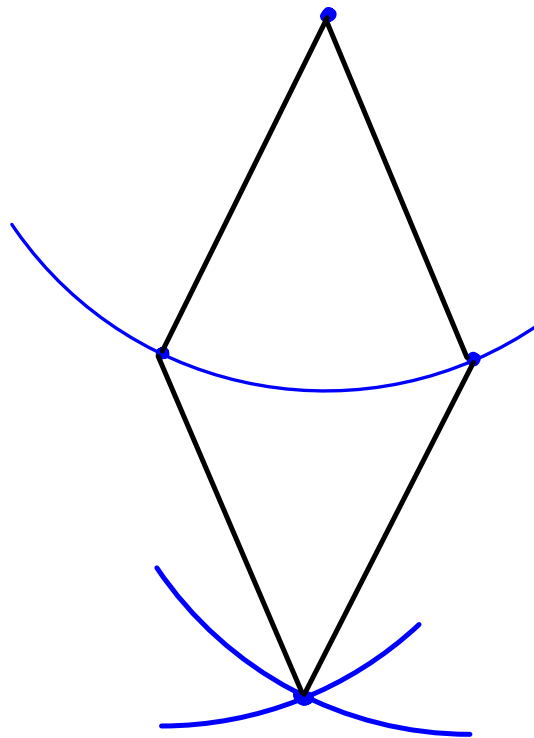
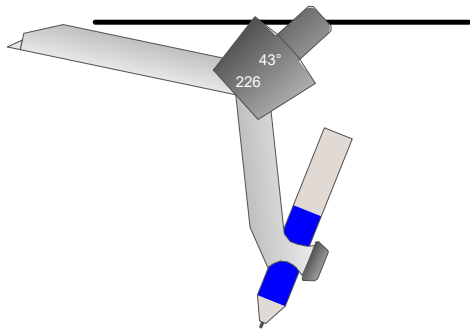
*Step 5:* Draw an arc of the circle with center  $R$  and radius  $QR$  to find the point  $S$  where it intersects the arc from the previous step.

*Step 6:* Draw the square  $PQRS$ .

*Done:*  $PS = PQ = QR = QS$ , yielding that  $PQRS$  is a rhombus. Since  $\angle PQR$  is a right angle, it follows that  $PQRS$  is a square.



# Construct a Rhombus



INFINITE GEOMETRY

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NAME \_\_\_\_\_

7F Construct a Hexagon **due Thursday** Date \_\_\_\_\_ Hour \_\_\_\_\_

**Construct a Hexagon that incorporates the given segment as one of the sides. Construct the inscribing circle around the hexagon.**

1)



2)



3)



4)



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Name \_\_\_\_\_ Hour \_\_\_\_\_

7F - Constructing a Square and Rhombus

Construct a **rhombus** with side lengths congruent to segment AB.

1.



2.



3.



4.



5.



6.





Construct a **square** with side lengths congruent to segment AB.

7.



8.



9.



10.



11.



12.

