Ch 1.5 - Division of Angles and Segments

Objectives:

Identify **midpoints** and **bisectors** of segments
Identify **trisection points** and **trisectors** of segments
Identify **angle bisectors**
Identify **angle trisectors**

Agenda:

1) DO NOW: Division of Segments and Angles
Hand back Quiz & HW Answer Packet
2) Check HW - Questions
3) 3 Clarifying Examples
4) Practice Problems

HW: p.32 #1, 2b, 3b, 5, 6, 8, 9, 12, 18, 19, 21, 23
& Vocabulary and Theorems for Section 6 (1.6)

DO NOW: Division of Segments and Angles

Midpoints and Bisectors of Segments:

· A point (segment, ray or line) that divides a ***segment*** into

_____ segments _____

the segments.

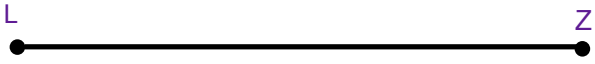
· The bisection point is called the _____ of the segment.

Is B a midpoint?

Is Q a midpoint?

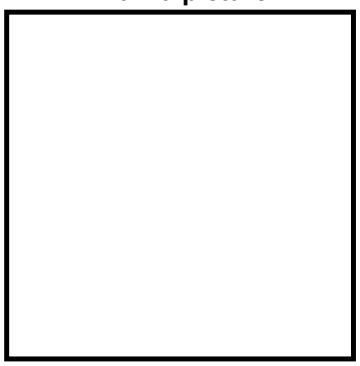
How many midpoints does LZ have?

How many bisectors does LZ have?



Angle Bisectors

Draw a picture



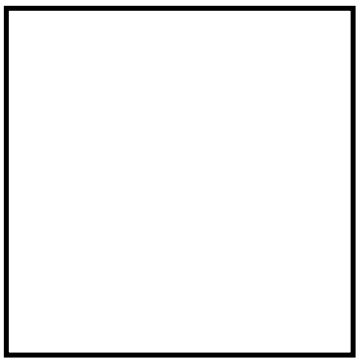
An angle, like a segment, can be bisected.

· A ray that divides an angle into two congruent angles _____ the angle.

· The dividing ray is called the _____ of the angle.

Trisection Points and Trisecting a Segment

Draw a picture

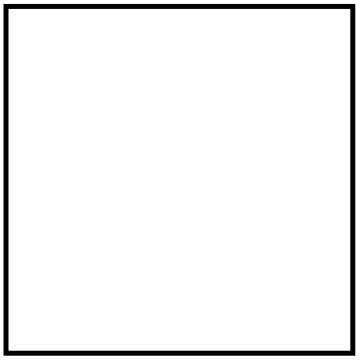


· Two points (or segments, rays or lines) that divide a segment into _____ segments _____ the segment.

· The two points at which the segment is divided are called the _____.

Angle Trisectors

Draw a picture



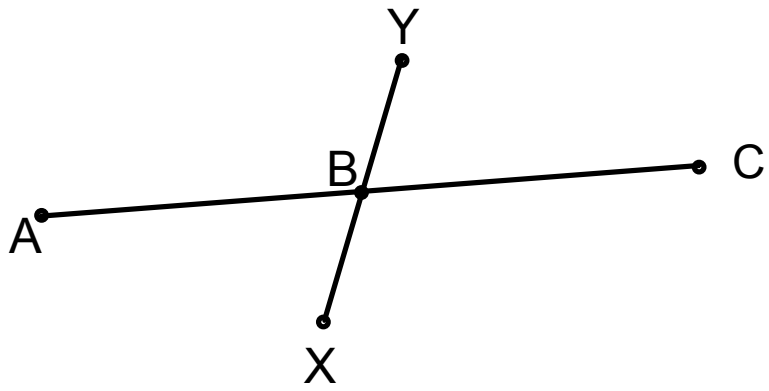
· Two rays that divide an angle into _____ angles _____ the angle.

· The two dividing rays are called _____ of the angle.

3 Clarifying Examples

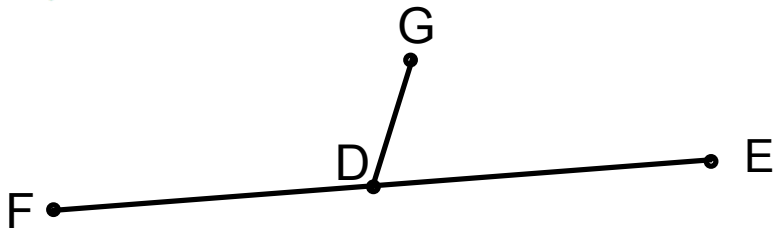
Example 1)
If $\overline{XY}$ bisects $\overline{AC}$ at B, what conclusions can we draw?

Conclusions



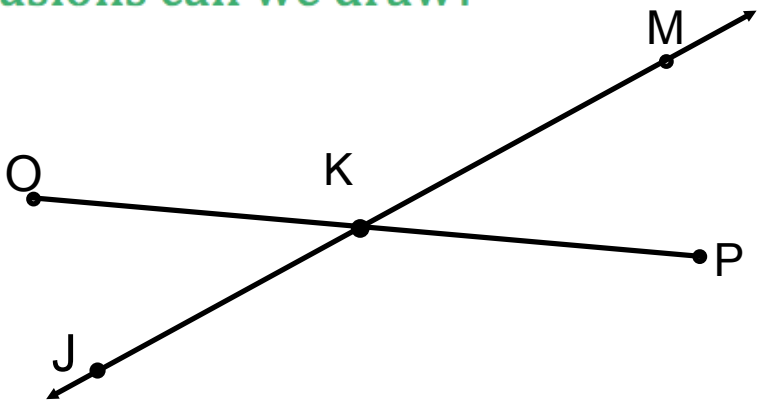
Example 2)
If D is the midpoint of $\overline{FE}$, what conclusions can we draw?

Conclusions



Example 3)
If $\overline{OK} \cong \overline{KP}$, what conclusions can we draw?

Conclusions

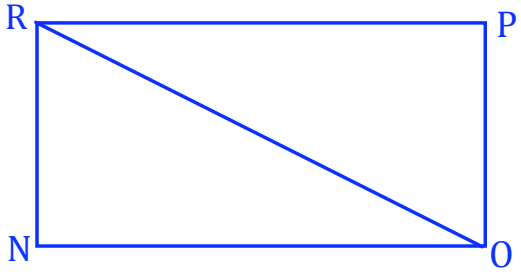


Tetbook Problems p. 32- 35

(Problems increase in difficulty the higher the number)

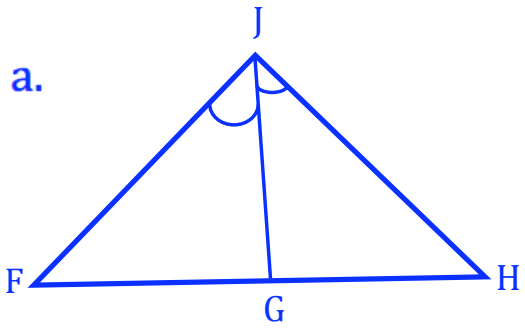
(2) Name the congruent angles:

a. $\overrightarrow{RO}$ *bisects* $< NRP$

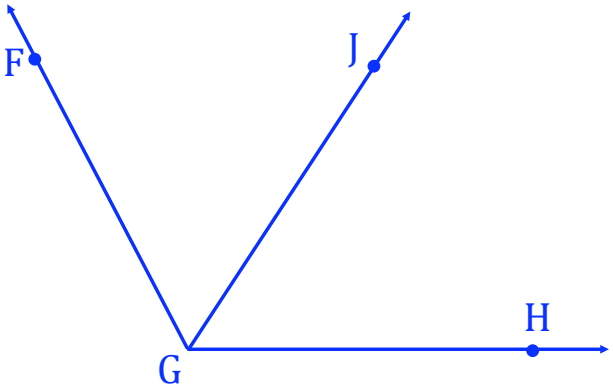


(3) Name the angle bisector

a.



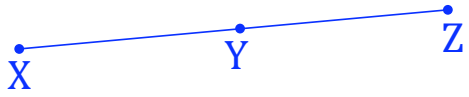
(7) Given: m<FGJ = 3x – 5
m<JGH = x + 27
$\overrightarrow{GJ}$ *bisects* $< FGH$
Find: m<FGJ



Tetbook Problems p. 32- 35
(Problems increase in difficulty the higher the number)

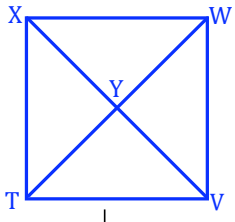
(13) Given: $\overline{XY} \cong \overline{YZ}$

Prove: Y is the midpoint of $\overline{XZ}$



(16) Given: < TXW is a right angle
< TYV is a right angle

Prove: < TXW≅< TYV

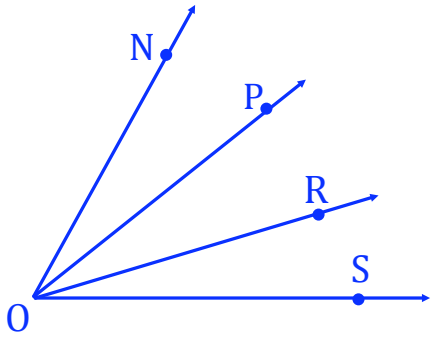


(22) Given: $\overrightarrow{OP}$ *and* $\overrightarrow{OR}$ *trisect* $< NOS$

m<NOP = 3x – 4y

m<NOR = x – y

Find: m<ROS



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