

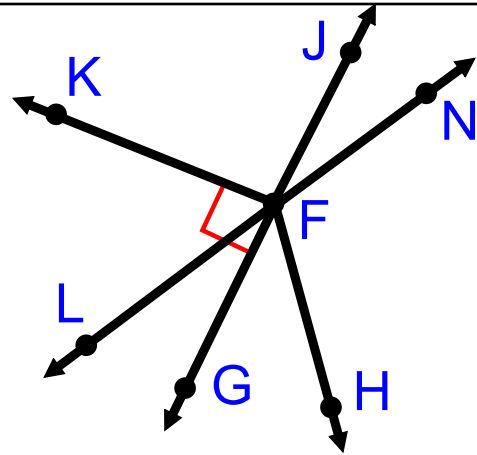
# Geometry

Chapter 1

Section 1-5

May 13-10:02 PM

Angle Types



Aug 18-2:23 PM

Angle Types

$\angle LFK, \angle KFJ$

**Adjacent angles**

Adjacent angles share a common side and vertex with no common interior points.

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Angle Types

$\angle LFG \text{ \& } \angle JFN$

**Vertical angles**

Vertical angles have sides that are opposite rays.

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Angle Types

$\angle KFL, \angle LFG$

**Complementary angles**

Complementary angles have measures that add up to 90.

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Angle Types

$\angle LFG, \angle GFH$

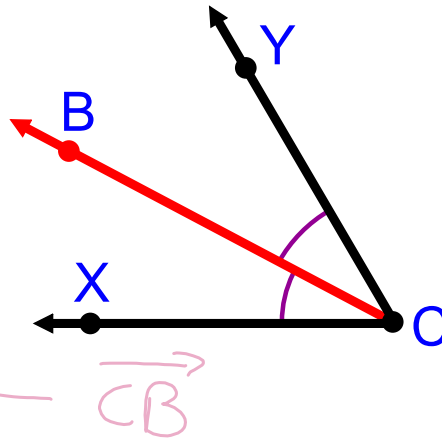
**Supplementary angles**

Supplementary angles have measures that add up to 180. (Also called a linear pair)

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# Angle Types

$\angle XCY$  is bisected



**Angle bisector** —  $\overrightarrow{CB}$

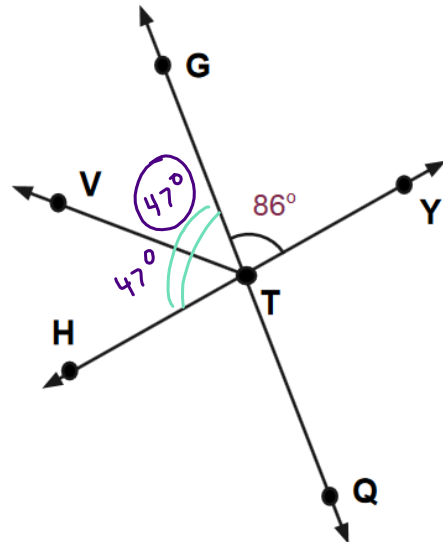
An angle bisector divides an angle into two smaller congruent angles.

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$\overleftrightarrow{HY}$  intersects  $\overleftrightarrow{GQ}$  at point T.  $\overline{TV}$  is a bisector of  $\angle HTG$ .  
 $\angle GTY$  measures  $86^\circ$ . Find the measure of the following angles:

$m\angle HTY = 180$       $m\angle GTH = 94$

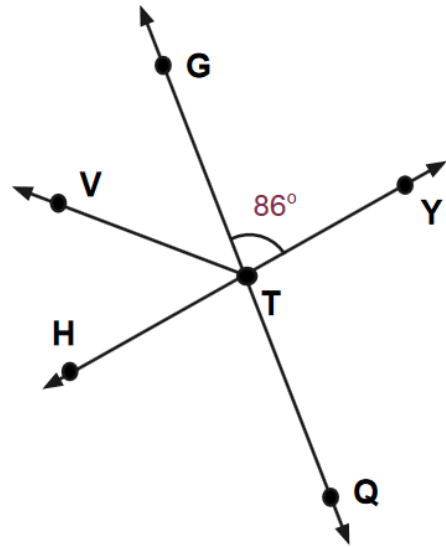
$m\angle VTH = \frac{1}{2}(94)$       $m\angle VTQ = 180 - 47$   
 $= 47$       $= 133$



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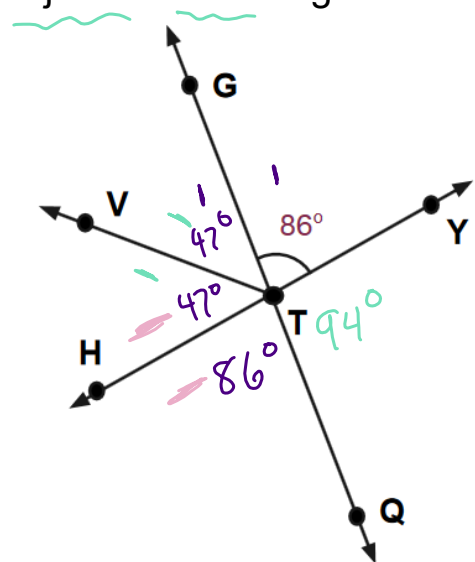
$\overleftrightarrow{HY}$  intersects  $\overleftrightarrow{GQ}$  at point T.  $\overrightarrow{TV}$  is a bisector of  $\angle HTG$ .  
 $\angle GTY$  measures  $86^\circ$ . Find a pair of supplementary angles.

$\angle VTQ, \angle VTG$   
 $\angle GTY, \angle YTQ$   
 $\angle HTQ, \angle QTY$



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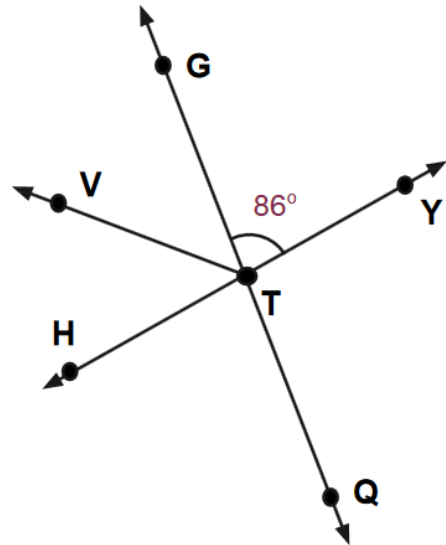
$\overleftrightarrow{HY}$  intersects  $\overleftrightarrow{GQ}$  at point T.  $\overrightarrow{TV}$  is a bisector of  $\angle HTG$ .  
 $\angle GTY$  measures  $86^\circ$ . Find two pairs of adjacent acute angles.



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$\overleftrightarrow{HY}$  intersects  $\overleftrightarrow{GQ}$  at point T.  $\overrightarrow{TV}$  is a bisector of  $\angle HTG$ .  
 $\angle GTY$  measures  $86^\circ$ . Find two pairs of congruent angles.

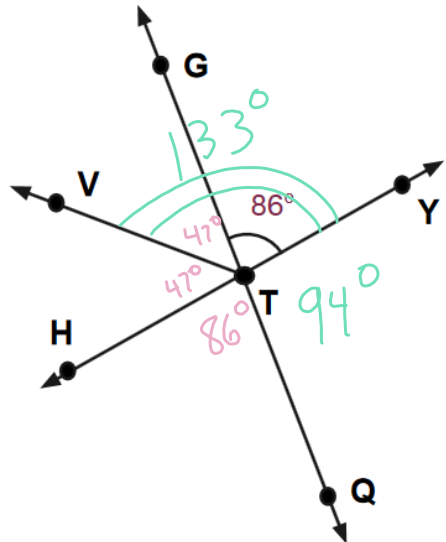
$\angle GTH$  &  $\angle YTQ$   
 $\angle HTY$  &  $\angle GTQ$



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$\overleftrightarrow{HY}$  intersects  $\overleftrightarrow{GQ}$  at point T.  $\overrightarrow{TV}$  is a bisector of  $\angle HTG$ .  
 $\angle GTY$  measures  $86^\circ$ . Find a pair of adjacent obtuse angles.

$\angle VTY$ ,  $\angle YTQ$



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## Assumptions From a Picture

### You can assume...

- angles are adjacent
- rays are opposites (line)
- adjacent angles are supplementary

line is straight

### You can not assume...

- ✱ • a right angle
- angles are complementary
- angles or segments are congruent
- anything about a shapes' measures or lengths

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If possible, answer the following questions.  
If there is not enough information explain why.

How many right angles are there? ~~X~~

How many vertical angle pairs are there?

Yes, 2 pairs

Are  $\angle AEF$  and  $\angle DEA$  supplementary?

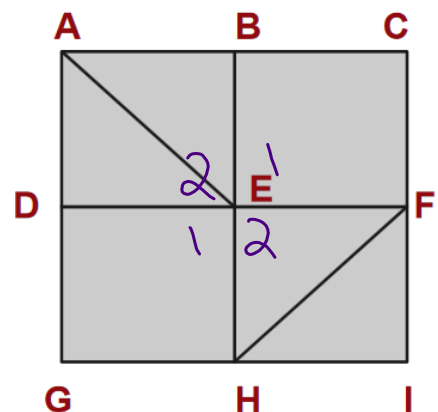
Yes

Are  $\angle FHI$  and  $\angle FHE$  complementary?

No

Are  $\angle BEF$  and  $\angle DEH$  vertical?

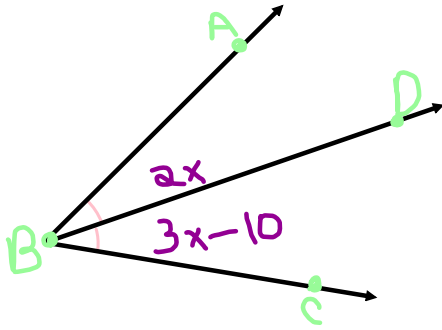
Yes



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## Problems with no diagram

$m\angle ABD = 2x$ ,  $\overrightarrow{BD}$  bisects  $\angle ABC$ , and  
 $m\angle CBD = 3x - 10$ . Find  $x$ .



$$\begin{aligned} 3x-10 &= 2x \\ -2x+10 & \quad -2x+10 \\ x &= 10 \end{aligned}$$

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# Homework

Pages 38-39

#8-38 even

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