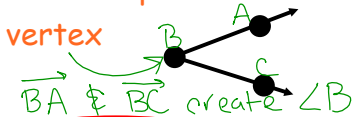


Geometry Section 1.4: Measure, Classify and Construct

EQ: How do you identify whether an angle is acute, right, obtuse, or straight?

Angle

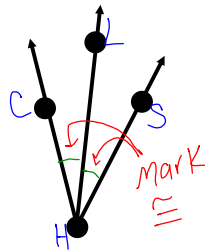
2 different rays w/ the same endpt. called the vertex



Angle Bisector

A ray that divides an angle into 2 congruent angles

\vec{HL} is the bisector



Angle Measure

Measure in degrees from 0 to 180



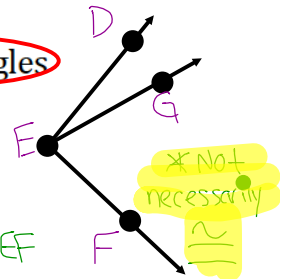
Congruent Angles

Angles with the same measure

Adjacent Angles

Two angles that share one side/ray

$\angle DEG$ & $\angle GEF$ share \vec{EG}



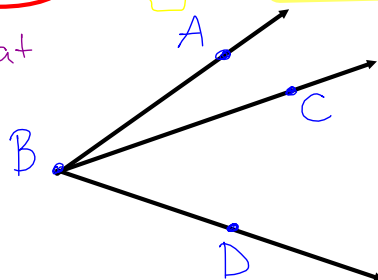
Protractor Postulate:

The rays of any angle can be matched one to one with the real numbers from 0° to 180° .

Angle Addition Postulate:

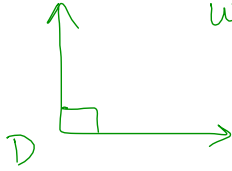
If $\angle ABC$ is adjacent to $\angle DBC$ then $m\angle ABC + m\angle DBC = m\angle ABD$.

*Notice what pts. they have in common

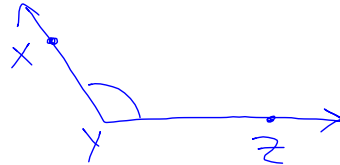


A1. Sketch and label each of the following described angles.

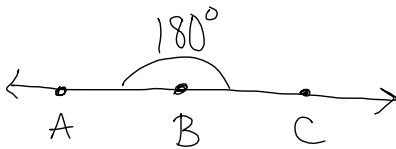
a. **Right** Angle D. *Label \angle 's with a pt. outside the \angle



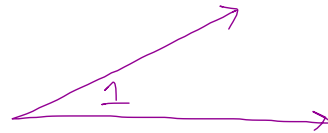
b. **Obtuse** $\angle XYZ$ $90^\circ < m < 180^\circ$



c. $m\angle ABC = 180^\circ$



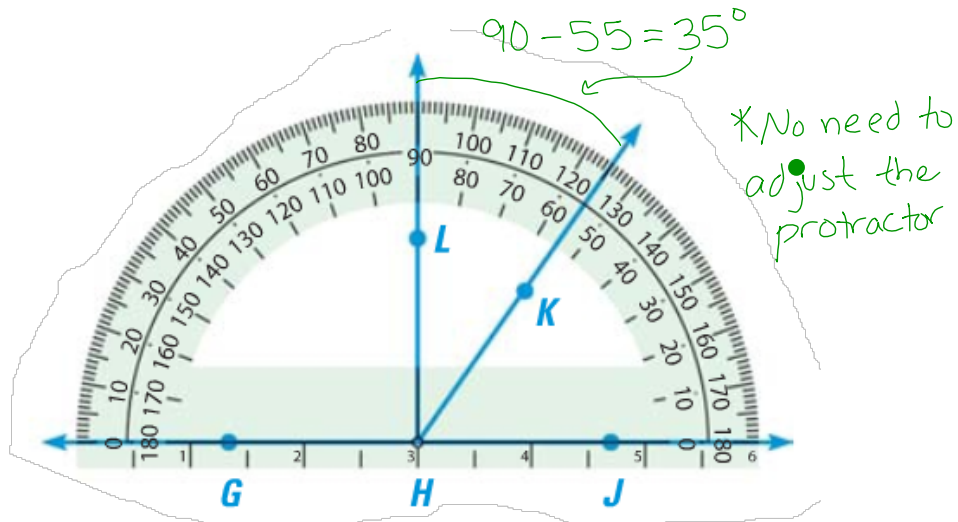
d. **Acute** $\angle 1$



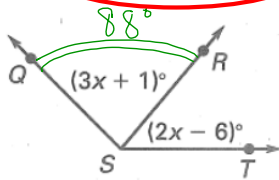
* Label \angle 's with # within \angle

EXAMPLE 2 Use the diagram to find the measure of the indicated angle. Then classify the angle.

- a. $\angle KHJ$ b. $\angle GHK$ c. $\angle GHJ$ d. $\angle GHL$



A2. Name all angles in the figure.



- $\angle QST$
- $\angle QSR$
- $\angle RST$

Notice pt. S is in the middle because common vertex

A3. Find the measure of $\angle QST$ if $m\angle QSR = 88^\circ$ in #2.

$$m\angle QSR = 88^\circ$$

$$3x + 1 = 88$$

$$\frac{3x}{3} = \frac{87}{3} \rightarrow x = 29$$

Angle Addition Postulate

$$m\angle QSR + m\angle RST = m\angle QST$$

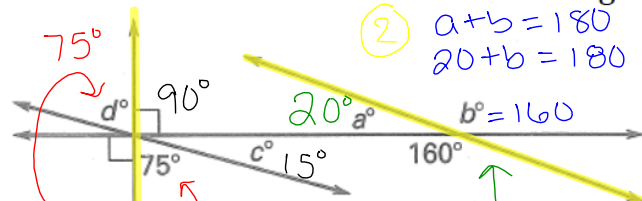
$$88 + 2x - 6 = m\angle QST$$

$$88 + 2(29) - 6 = m\angle QST$$

$$88 + 58 - 6 = m\angle QST$$

$$140^\circ = m\angle QST$$

A4. Find the measure of each lettered angle.



Vertical \angle s \cong

③ $90 + 75 + c = 180$
 $165 + c = 180$
 $c = 15$

① Straight $\angle = 180$
 $a + 160 = 180$
 $a = 20$

- a = 20
- b = 160
- c = 15
- d = 75

* Focus on finding all \angle s in figure then answer the Q?

A5. Use a protractor to find the measure of the angles formed by the streets on the map. Use the letters to give the name of each angle.

a. Cherry & Chestnut

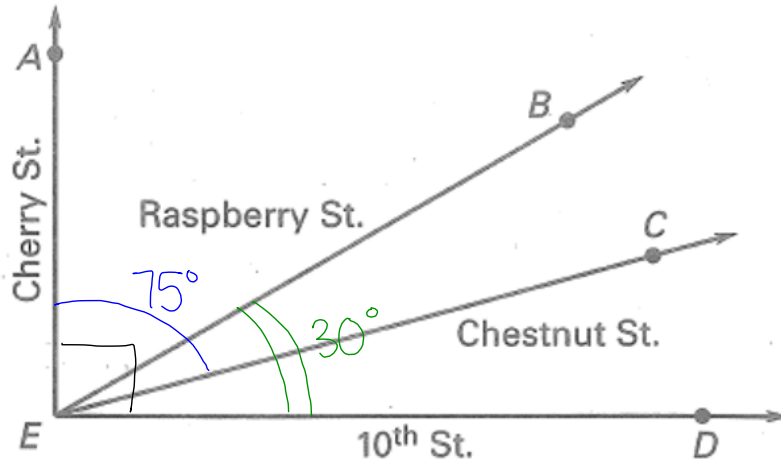
$$m\angle AEC = 75^\circ$$

b. Raspberry & 10th

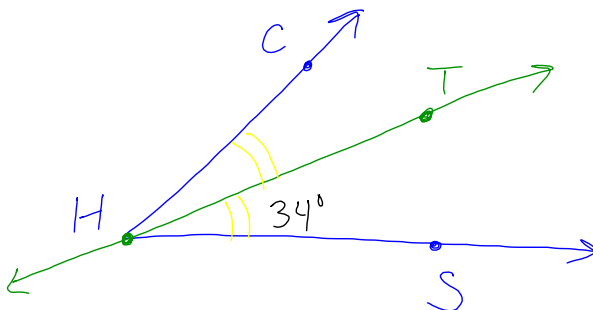
$$m\angle BED = 30^\circ$$

c. Cherry and 10th

$$m\angle AED = 90^\circ$$



A6. If $\angle CHS$ is bisected by a line with point T forming $\angle THS$ with a measure of 34° . Sketch this situation and give $m\angle CHS$.



if $m\angle THS = 34^\circ$ then
 $m\angle CHT = 34^\circ$ as well
 (definition of bisector)

$$m\angle CHS = 34 + 34$$

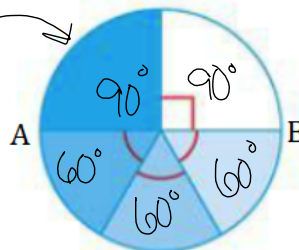
$$m\angle CHS = 68^\circ$$

A7. Use the markings to determine the measure of each central angle.
 (\overline{AB} is a diameter)

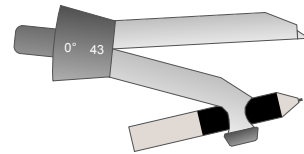
$$= 180^\circ$$

$$\frac{180}{3} = 60^\circ$$

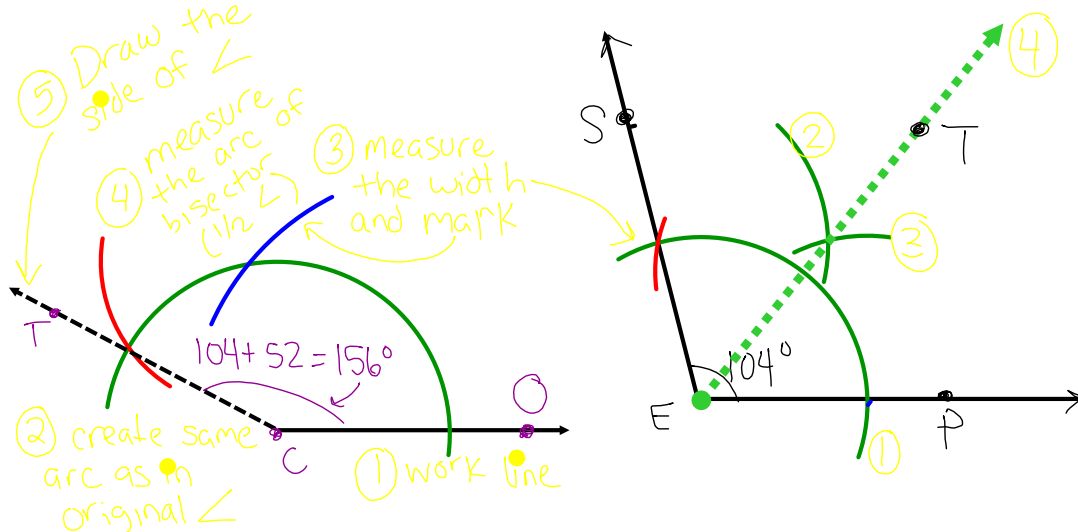
$$180 - 90 = 90$$



A8. Use the space below to complete the following.

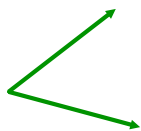


- a. Draw $\angle SEP$, which is 104° .
- b. Construct the bisector of $\angle SEP$, label it \overrightarrow{ET} . *use compass
- c. Construct $\angle OCT$, which is 1.5 times the measure of $\angle SEP$.



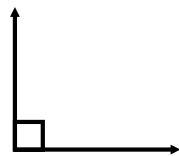
EQ: How do you identify whether an angle is acute, right, obtuse, or straight? (meaning recognize visually and by the degree)

1.4 SUMMARY:



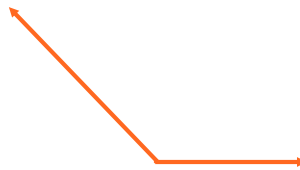
Acute

Because the angle is less than 90 degrees



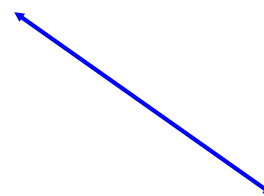
Right

Because the angle is marked with the box which means 90 degrees



Obtuse

Because the angle is more than 90 degrees



Straight

Because the angle forms a straight line which is 180 degrees