

ACT RESPONSIBLY & SUPPORT the COMMUNITY.

- Be on Time
- Wear ID
- Chromebook Ready
- SEE SOMETHING, SAY SOMETHING



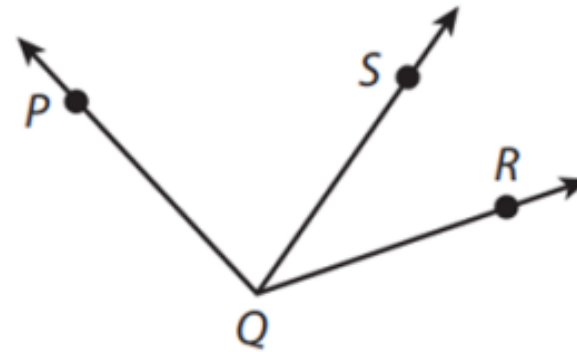
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16.2 Angle Measure and Angle Bisectors

16.2

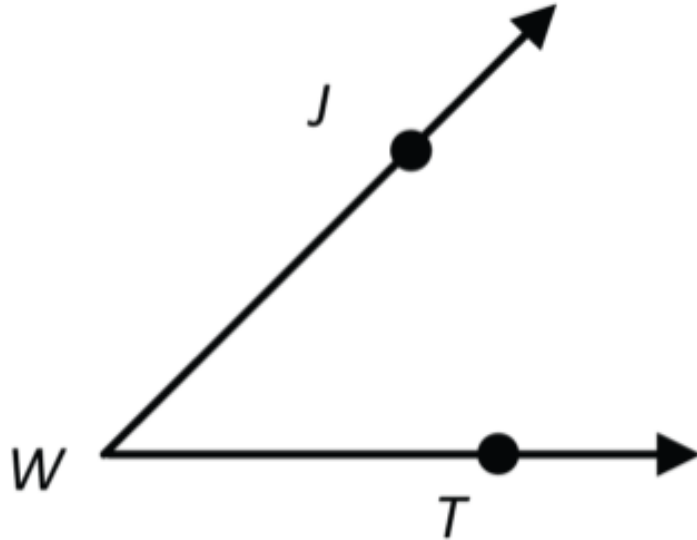
Postulate 2: Angle Addition Postulate

If S is in the interior of $\angle PQR$, then
 $m\angle PQR = m\angle PQS + m\angle SQR$.





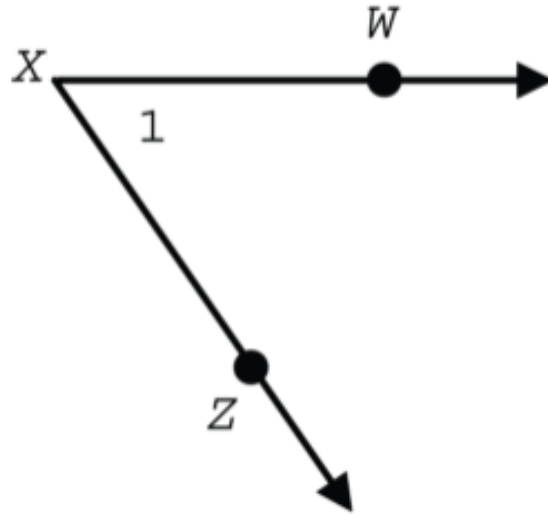
Choose the proper angle with the given name angle $\angle TWJ$.



When an angle is named with three letters, the middle letter is the vertex.



Name each angle in as many different ways as possible.

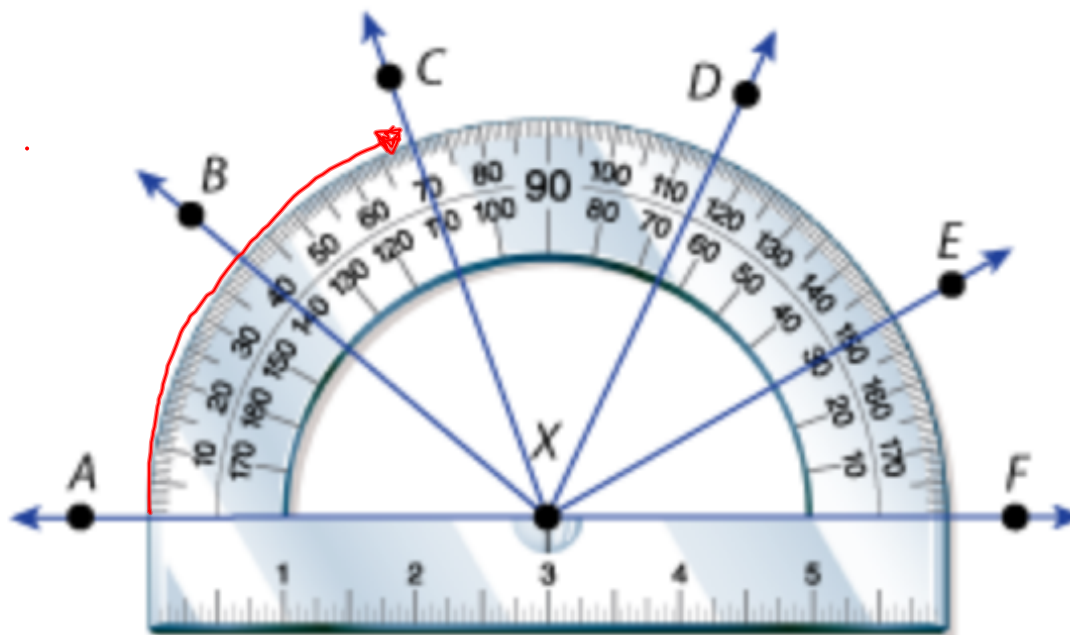


\angle \angle \angle \angle

Vertex Number Three letters

3

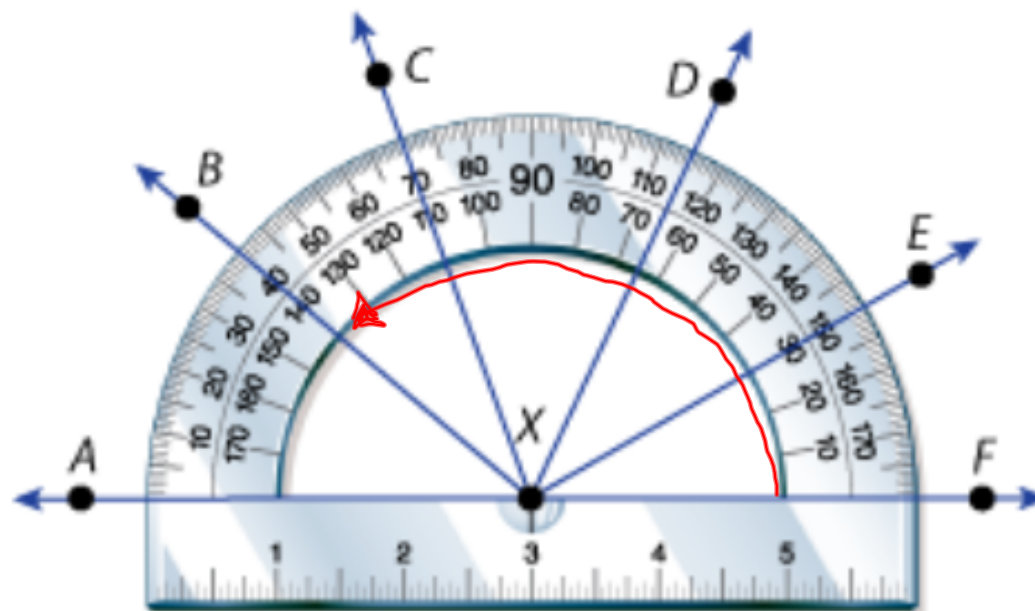
Find the measure of the angle $\angle AXC$ using the figure below



$$m \angle AXC = \boxed{70}$$

4

Find the measure of the angle $\angle BXF$ using the figure below.



$$m \angle BXF = \boxed{140}$$

5

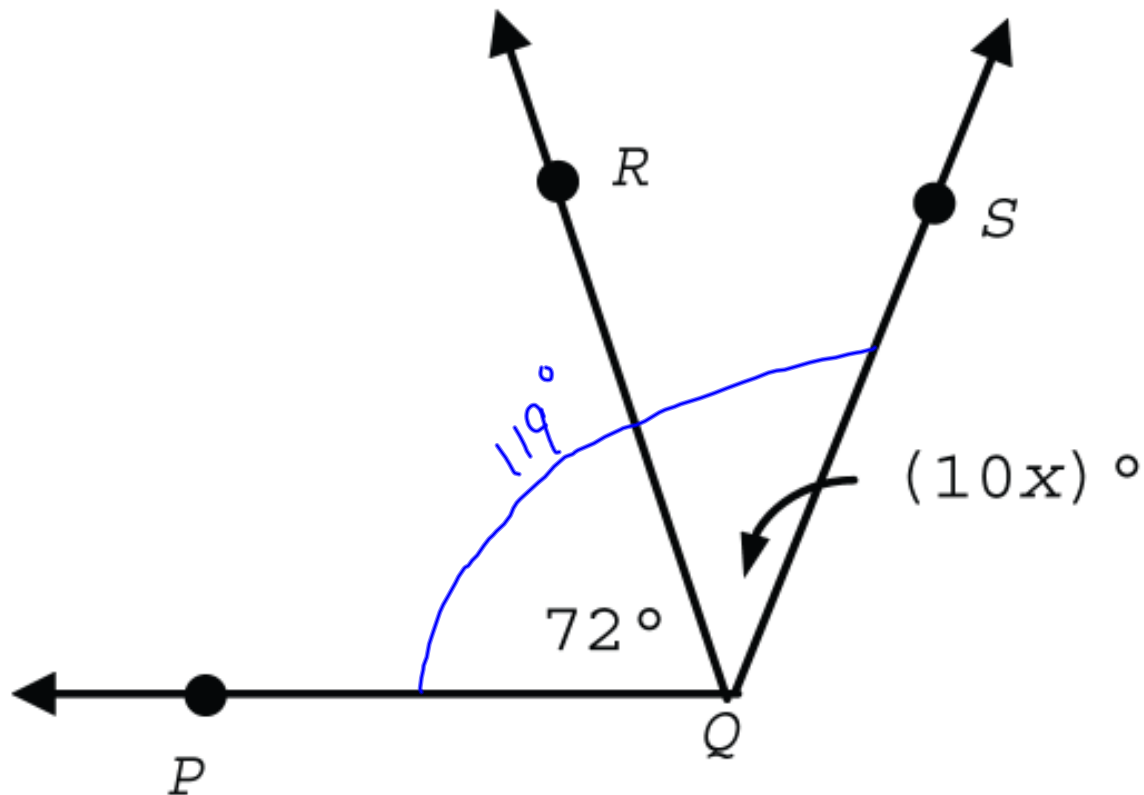
Find the value of x , given that $m\angle PQS = 119^\circ$.
Round the answer to one decimal place if necessary.

$$m\angle PQR + m\angle RQS$$

$$72 + 10x$$

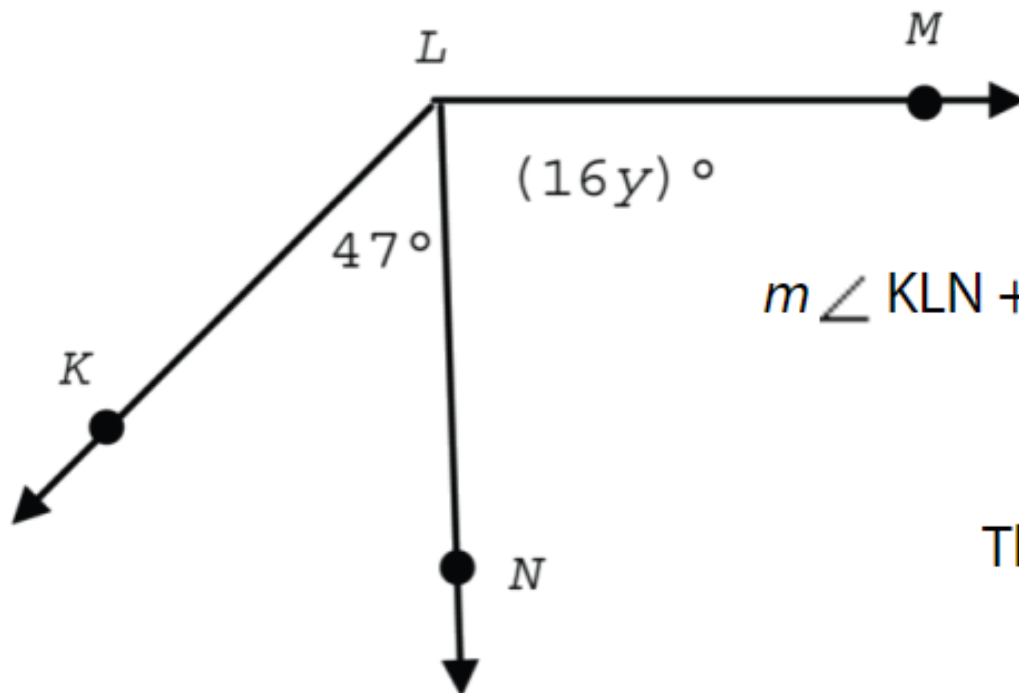
$$10x$$

$$x$$



6

Find the value of y , given that $m\angle KLM = 135^\circ$.
Round the answer to two decimal places if necessary.



$$m\angle KLN + m\angle NLM = m\angle KLM$$

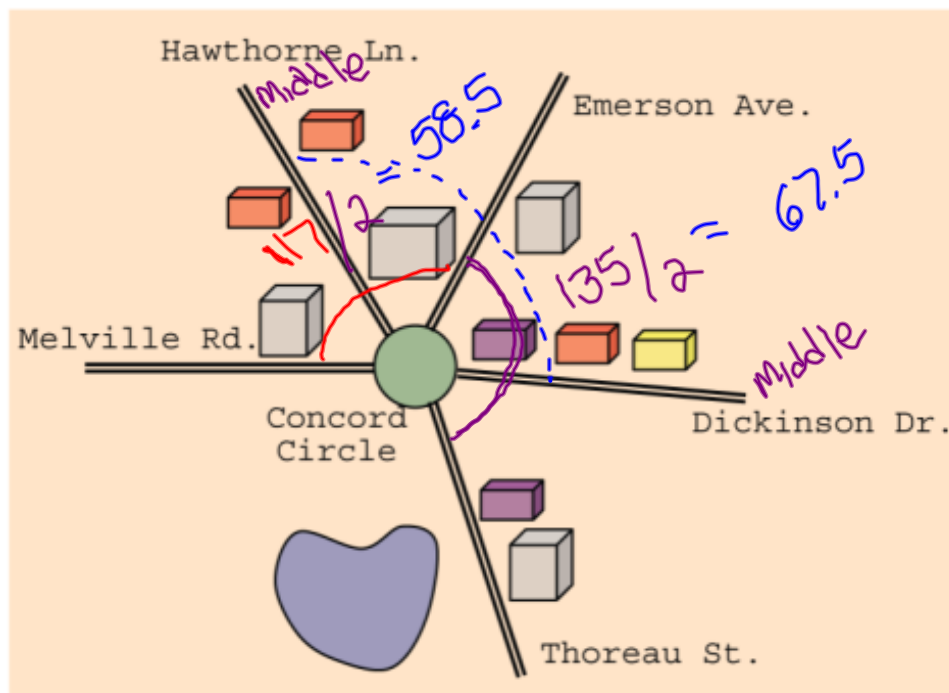
$$47 + 16y = 135$$

$$16y = 88$$

$$\text{Therefore, } y = 5.5.$$

7

The figure shows a map of five streets that meet at Concord Circle. The measure of the angle formed by Melville Road and Emerson Avenue is 117° . The measure of the angle formed by Emerson Avenue and Thoreau Street is 135° . Hawthorne Lane bisects the angle formed by Melville Road and Emerson Avenue. Dickinson Drive bisects the angle formed by Emerson Avenue and Thoreau Street. What is the measure of the angle formed by Hawthorne Lane and Dickinson Drive? Explain your reasoning.

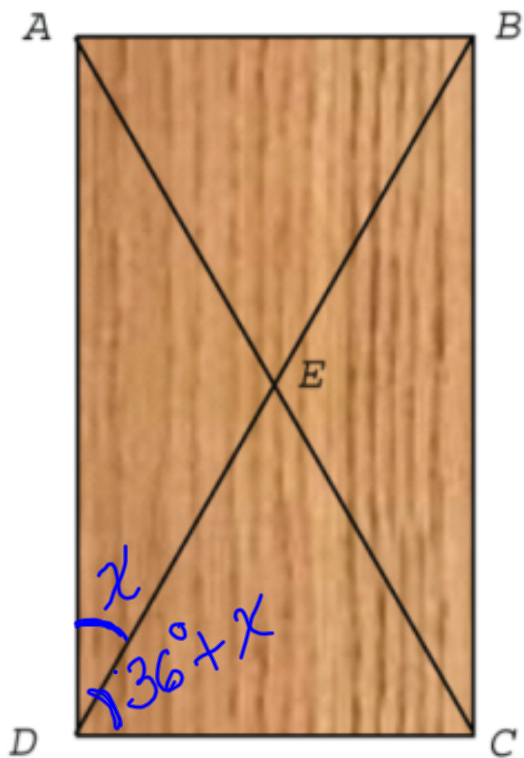


$$\begin{array}{r} 58.5 \\ 67.5 \\ \hline 126 \end{array}$$

The measure of the angle formed by Hawthorne Lane and Dickinson Drive is $^\circ$.

8

A carpenter is building a rectangular bookcase with diagonal braces across the back, as shown. The carpenter knows that $m\angle ADC$ is a right angle and that $m\angle BDC$ is 36° greater than $m\angle ADB$. Solve an equation to find $m\angle BDC$ and $m\angle ADB$.



Let $m\angle ADB = x$. Then $m\angle BDC = x + 36$

$$m\angle ADB + m\angle BDC = m\angle ADC.$$

$$x + (x + 36) = 90$$

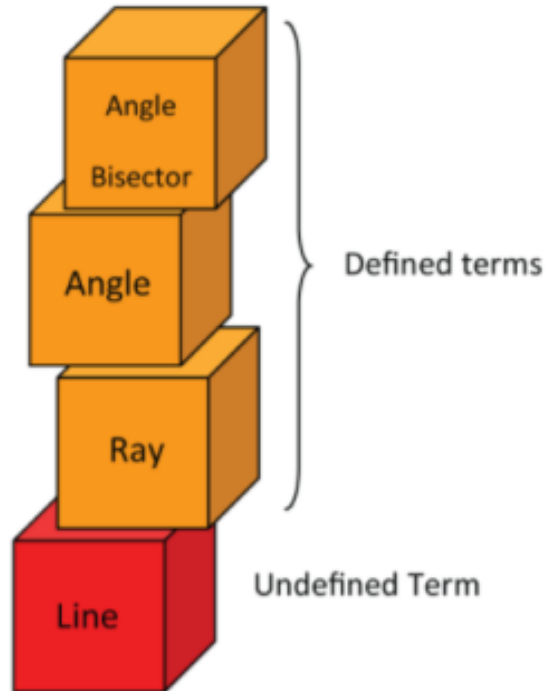
$$2x + 36 = 90$$

$$2x = 54$$

$$x = 27$$

The measure of angle BDC is 63° and the measure of angle ADB is 27° .

9 Use the image given to describe the relationships among the four terms.



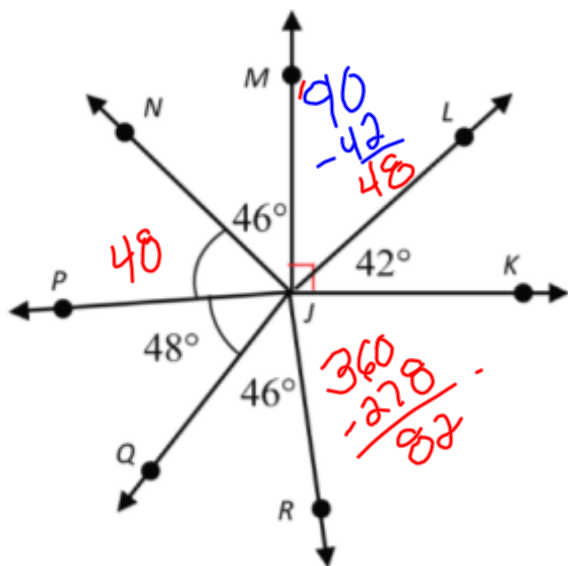
The definition of the term "angle bisector" is built upon the the definition of the term .

The definition of the term "angle" is built upon the definition of the term .

The definition of the term "ray" is built upon the undefined term .

10

Determine whether each of the following pairs of angles have equal measures. Drag and drop each pair of angles into the correct category to show which pairs have equal measures.



Equal Measures	Unequal Measures
$\angle LJP$ and $\angle NJR$	$\angle KJR$ and $\angle MJP$
$\angle MJP$ and $\angle PJR$	$\angle MJK$ and $\angle PJR$
	$\angle KJL$ and $\angle LJM$

$\angle KJR$ and $\angle MJP$

$$82 \quad 48 + 46 = 94$$

$\angle LJP$ and $\angle NJR$

$$\begin{array}{r} 48 \\ 46 \\ \hline 94 \end{array} \quad \begin{array}{r} 48 \\ 48 \\ 46 \\ \hline 142 \end{array}$$

$\angle MJK$ and $\angle PJR$

$$90 \quad 48 + 46 = 94$$

$\angle KJL$ and $\angle LJM$

$$42 \quad 48$$

$\angle MJP$ and $\angle PJR$

$$\begin{array}{r} 48 \\ 46 \\ \hline 94 \end{array} \quad \begin{array}{r} 48 \\ 46 \\ \hline 94 \end{array}$$