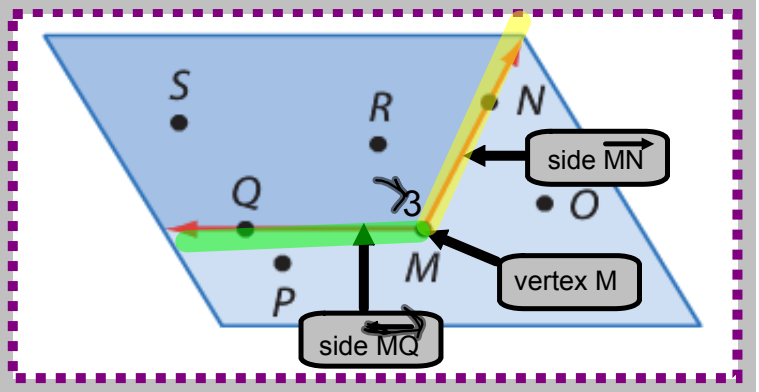
PARTS OF AN ANGLE

An angle is formed by two *noncollinear* rays that share a common endpoint.

vertex



Naming an angle:

(4 ways)

∠M ∠QMN

∠3 ∠NMQ

An angle divides a plane into three distinct parts.

How do you describe the sides of an angle?

by naming the rays

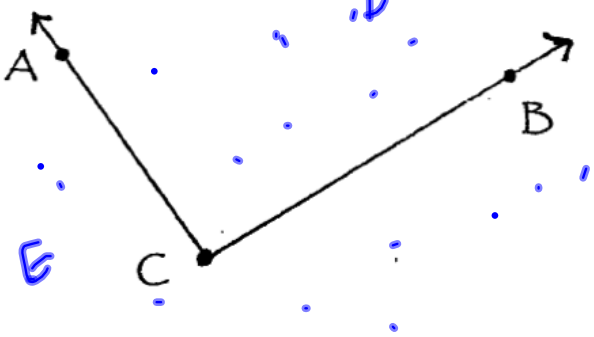
- interior of the angle: R, S
- exterior of the angle: P, O
- lie on the angle: Q, M, N

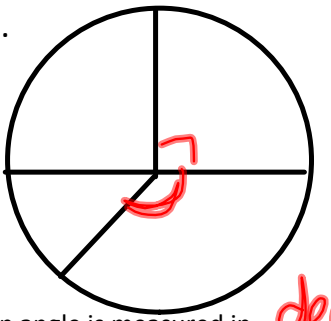
Name the vertex of this angle. C

Give three names for the angle. ∠C ∠ACB ∠BCA

(The vertex is always the MIDDLE letter.)

Place point D in the interior and point E in the exterior of the angle.





straight angle = 180°

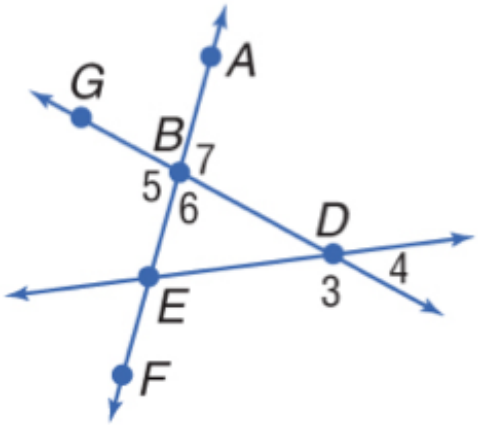
The width or measure of an angle is measured in degrees. There are 360° degrees in a circle.

Right angles measure 90°. Acute angles measure less than 90°. Obtuse angles measure greater than 90°.

Partner 1: Name all the angles that have a vertex at B. (4)

Partner 2: Name the sides of angle 5. (3)

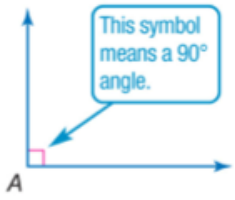
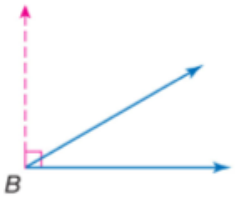
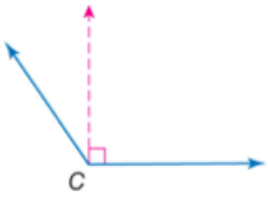
Both: Write another name for angle 6. (4)



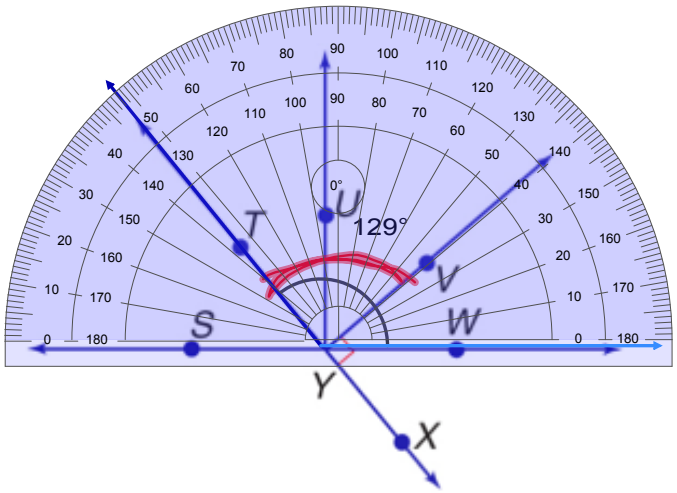
The width or measure of an angle is measured in _____. There are _____ degrees in a circle.

Right angles measure _____. Acute angles measure _____. Obtuse angles measure _____.

KeyConcept Classify Angles

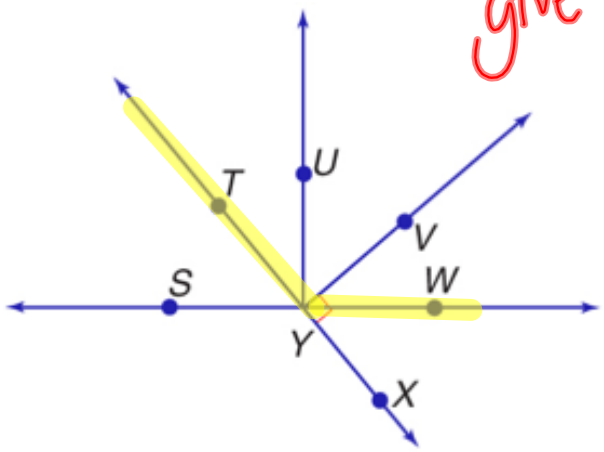
right angle	acute angle	obtuse angle
		
$m\angle A = 90$	$m\angle B < 90$	$180 > m\angle C > 90$

A. Measure ∠TYV and classify it as *right, acute,* or *obtuse.*

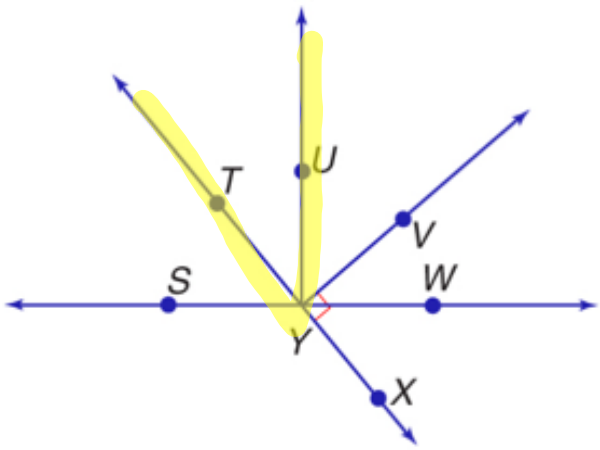


B. Measure $\angle WYT$ and classify it as *right, acute,* or *obtuse*.

give a type



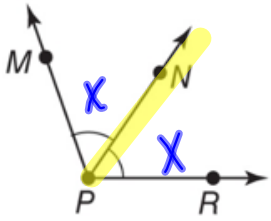
C. Measure $\angle TYU$ and classify it as *right*, *acute*, or *obtuse*.

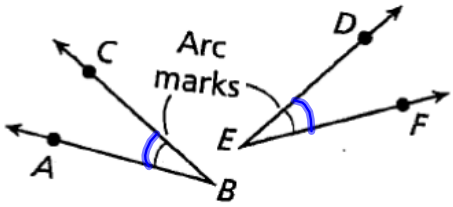


Congruent angles angles that have the same measure.

Angle bisector: divides the angle into two congruent angles

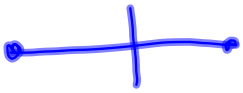
ANGLES AND ALGEBRA

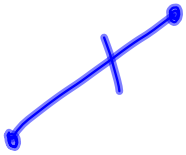




$\overrightarrow{PN}$ bisects angle MPR, therefore,

$\angle MPN \cong \angle NPR$

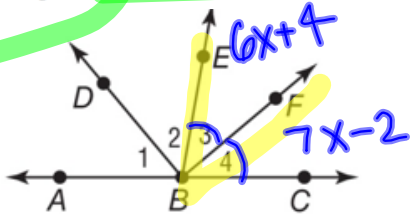




In the figure $\overrightarrow{BA}$ and $\overrightarrow{BC}$ are opposite rays. $\overrightarrow{BF}$ bisects $\angle CBE$.

$\angle 3 \cong \angle 4$

*measures are equal



If $m\angle EBF = 6x + 4$ and $m\angle CBF = 7x - 2$, find $m\angle EBF$.

measure

$6x+4 = 7x-2$

$x = 6$

$m\angle EBF = 6x+4 = 6(6)+4$

$= \boxed{40^\circ}$

If $m\angle 3 = 4x + 10$ and $m\angle 4 = 5x$, find $m\angle 4$.

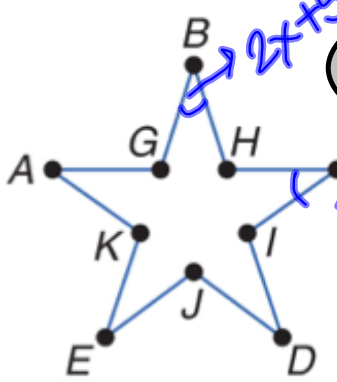
$4x+10 = 5x$

$x = 10$

$m\angle 4 = 5x$

$= 5 \cdot 10 = \boxed{50^\circ}$

INTERIOR DESIGN **Wall stickers of standard shapes are often used to provide a stimulating environment for a young child's room. A five-pointed star sticker is shown with vertices labeled. Find $m\angle GBH$ and $m\angle HCI$ if $\angle GBH \cong \angle HCI$, $m\angle GBH = 2x + 5$, and $m\angle HCI = 3x - 10$.**



Label the diagram based off what we've been given.

$2x+5=3x-10$

$x=15$

$2(15)+5=35^\circ = m\angle GBH = m\angle HCI$

$3(15)-10=35^\circ$