1.4 – Angle Measure

Goals Aligned to Common Core State Standards:

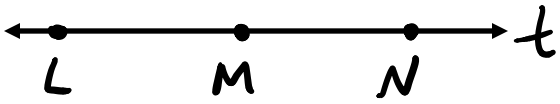
- You will identify rays, angles, and the vertex.
- You will measure and classify angles.
- You will identify and use congruent angles and the bisector of an angle.
- You will construct an angle that is congruent to a given angle and bisect an angle.
- MP 4, 5, 6

Measure Angles

- **Ray** model:

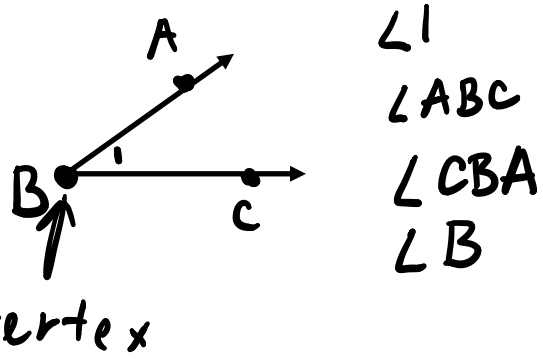
  Symbols: $\overrightarrow{AB}$

- Opposite rays



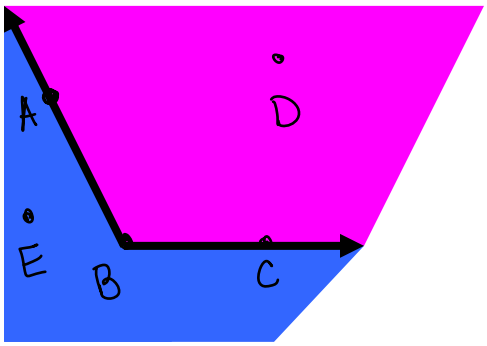
*Line *t* has 2 rays $\overrightarrow{MN}$ and $\overrightarrow{ML}$.

- **Angle**: 2 rays with the same endpoint (vertex)
  - Symbols:



∠1
∠ABC
∠CBA
∠B

- An angle divides a plane into 3 distinct parts.
- What points . . .
  - Lie on the angle:
    Points A, B, C
  - Lie in the interior of the angle:
    D.
  - Lie in the exterior of the angle:
    E



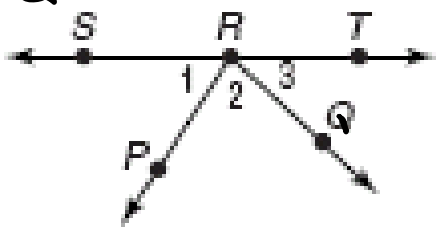
1) Name all the angles that have R as its vertex.

∠1, ∠2, ∠3, ∠PRT, ∠SRQ

2) Name the sides of ∠1.

$\overleftrightarrow{ST}$ (straight ∠)

$\overrightarrow{RS}$
$\overrightarrow{RP}$



3.) What is another name for ∠1?

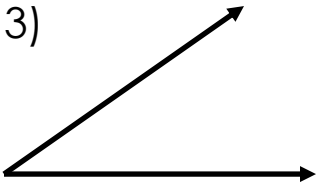
∠SRP

Measuring Angles

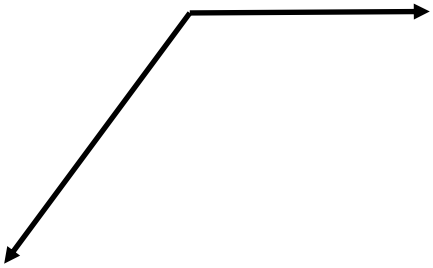
What is used to measure an angle?
If angle PQR is 75 degrees, the correct notation would be:
$m\angle PQR = 75$
Remember: The letters represent sides and the angle. The letter in the middle represents the angle and the outside letters represents the sides.

- Label each angle as $\angle ABC$
- Measure the angles
- Classify the angles as acute, obtuse, or right and label them accordingly.

3)

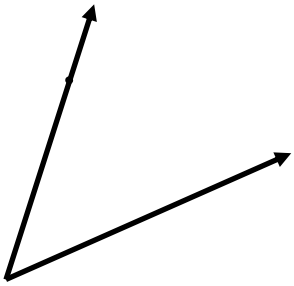


4)

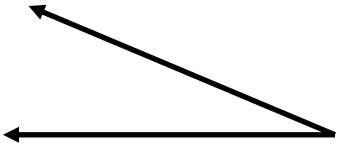


5) Draw a 48˚ angle.

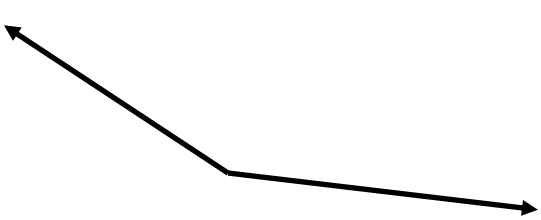
6)



7)

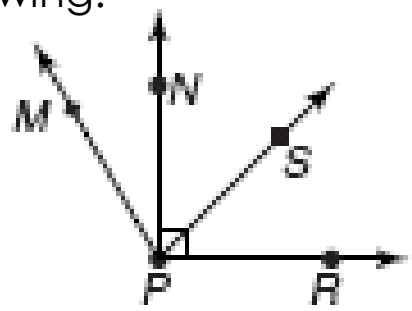


8)

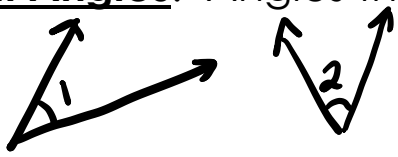


Your Homework Examples will look like the following:
Measure and classify each angle.

9) $\angle MPR$ 10) $\angle RPN$ 11) $\angle NPS$



Congruent Angles: Angles that have the same measure.

Model: 

Symbols: $\angle 1 \cong \angle 2$

Cannot use protractor here!!!! Only use when worded like above

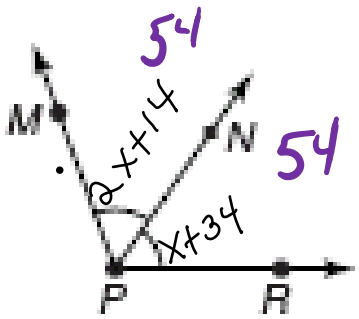
Ex: If $m\angle MPN = 2x+14$ and $m\angle NPR = x+34$, find x and $m\angle MPR$.

$2x+14 = x+34$

$-x \quad -x$

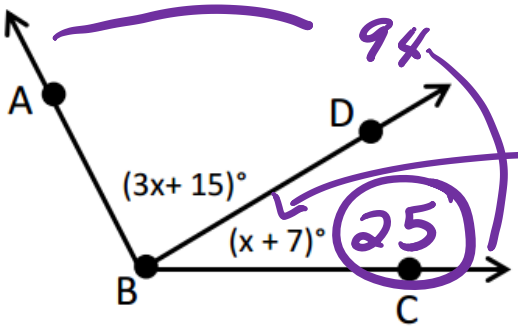
$x+14 = 34$

$x = 20$



$m\angle MPR = 108$

3) Given $m\angle ABC = 94°$, find $m\angle CBD$.



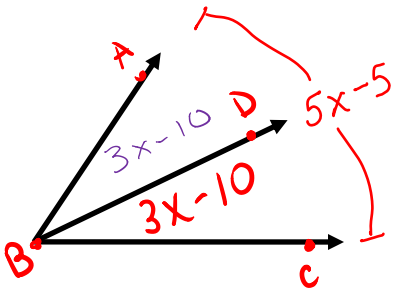
$3x+15 + x+7 = 94$

$4x + 22 = 94$

$4x = 72$

$x = 18$

Angle Bisector: cuts an ∠ into 2 ≅ parts



Find m∠ABC if $\overrightarrow{BD}$ is an angle bisector.

$2(3x-10) = 5x-5$

$3x-10+3x-10 = 5x-5$

$\frac{5x-5}{2} = 3x-10$

$x=15$

$m\angle ABC = 70$

Pg. 39 Copy an Angle, Pg. 40 Bisect an Angle

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Homework:

1.4 Pg. 41 #12, 16, 20, 25-41odd, 42, **52 challenge**

AUGIE! WHAT DID YOU LEARN IN SCHOOL THIS YEAR?
I LEARNED TO COUNT, AND TO RECITE THE ENTIRE ALPHABET-- ALL 26 LETTERS!
A-B-C-D-E-F-G...
H-I-J-K-L-M-N-O-P...
www.frankandernest.com
Q-R-S-T-U-V...
W-X-Y-Z!
E-mail: BobThaves@aol.com
AND THE COUNTING?
COUNTING'S OKAY, BUT SAYING THE ALPHABET GIVES YOU MORE CLOSURE.
5-26
THAVES