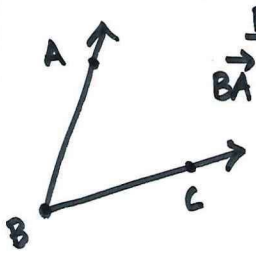
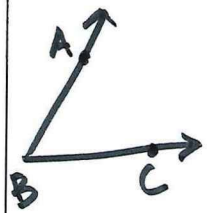
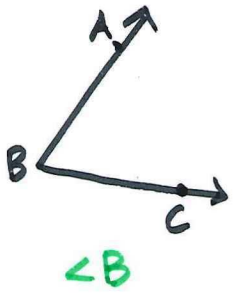
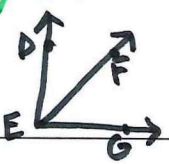
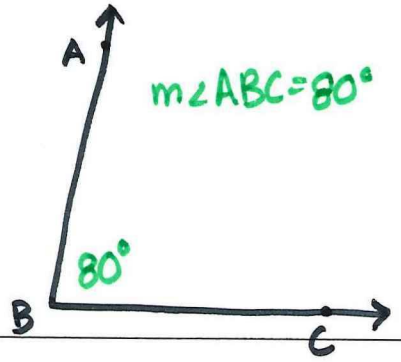
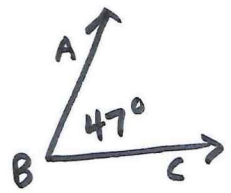
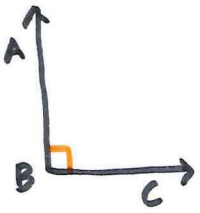
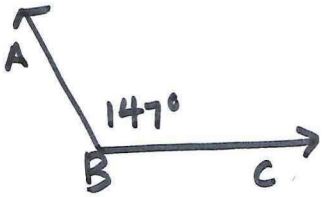
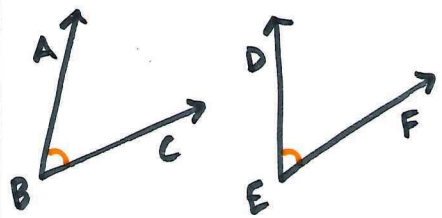
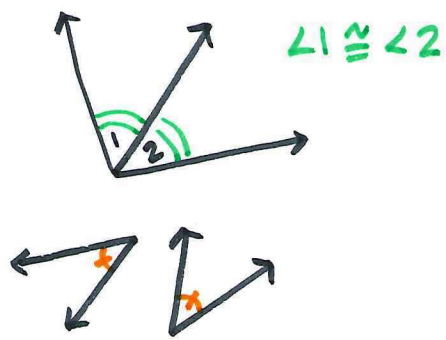
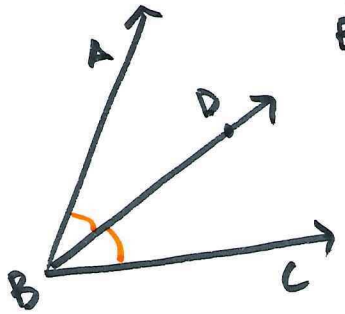
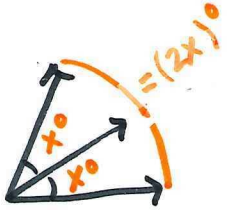
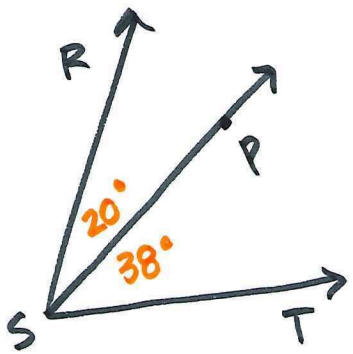
Section: 1.4 Date_____

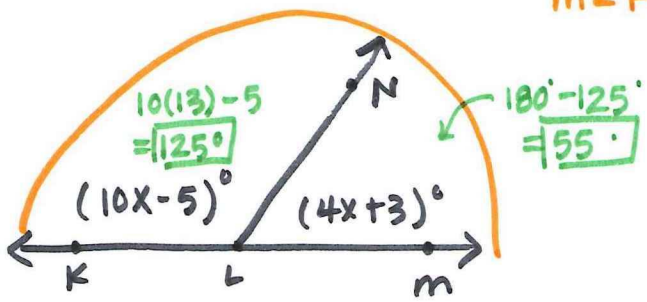
MEASURE and CLASSIFY ANGLES

Vocabulary	Definition	Example
ANGLE	An angle consists of two different rays with the same endpoint angle = ∠	 Rays $\overrightarrow{BA}$ and $\overrightarrow{BC}$ Common endpoint Point B Name an angle with 3 points that are on the angle but the middle letter must be the common endpoint (vertex). ∠ABC or ∠CBA
SIDES of an ANGLE	The rays are called the sides of an angle.	 Sides $\overrightarrow{BA}$ and $\overrightarrow{BC}$ ∠DEF sides: $\overrightarrow{ED}$ and $\overrightarrow{EF}$
VERTEX of an ANGLE	The endpoint is the vertex of an angle.	 ∠B Vertex Point B You may name an angle by its vertex (example: ∠B) only when it is the vertex for that angle/one angle.  ∠M, ∠LMN, ∠NML, ∠2  ∠DEF, ∠FED, ∠FEG, ∠GEF, ∠DEG, ∠GED
MEASURE of an ANGLE	In ∠ABC, $\overrightarrow{BA}$ and $\overrightarrow{BC}$ can be matched one to one with real numbers from 0 to 180. The measure of ∠ABC is equal to the absolute value of the difference between the real numbers for $\overrightarrow{BA}$ and $\overrightarrow{BC}$.	 m∠ABC = 80° "The measure of angle ABC is..." m∠ABC = m = measure (degrees)

ACUTE ANGLE	An angle whose measure is between 0° and 90°	$0° < x° < 90°$ 	$m\angle ABC = 47°$ $\angle ABC$ is an acute $\angle$.
RIGHT ANGLE	An angle that measures 90°.	$x° = 90°$ 	$m\angle ABC = 90°$ $\angle ABC$ is a right $\angle$. right angle: ⌐ $\angle ABC$ is ⌐.
OBTUSE ANGLE	An angle whose measure is between 90° and 180°.	$90° < x° < 180°$ 	$m\angle ABC = 147°$ $\angle ABC$ is an obtuse $\angle$.
STRAIGHT ANGLE	An angle that measures 180°.	$x° = 180°$ 	$m\angle ABC = 180°$ $\angle ABC$ is a straight $\angle$. * opposite rays form straight $\angle$s. $\overrightarrow{BA}$ and $\overrightarrow{BC}$

CONGRUENT ANGLES	Angles with the same measure.	$\angle ABC \cong \angle DEF$   $\angle 1 \cong \angle 2$
ANGLE BISECTORS	A ray that divides an angle into two congruent angles.	 $\overrightarrow{BD}$ bisects $\angle ABC$.  ① $m\angle ABC = 50$ $m\angle ABD = 25^\circ$ ② $m\angle DBC = 30^\circ$ $m\angle ABD = 30^\circ$ $m\angle ABC = 60^\circ$
ANGLE ADDITION POSTULATE	If P is in the interior of ∠RST, then the measure of ∠RST is equal to the sum of the measures of ∠RSP and ∠PST. If P is in the interior of ∠RST, then $m\angle RST = m\angle RSP + m\angle PST$	 $m\angle RST = m\angle RSP + m\angle PST$ $m\angle RST = 20^\circ + 38^\circ$ $m\angle RST = 58^\circ$

Solve for x. Then find the measures of the other angles.



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

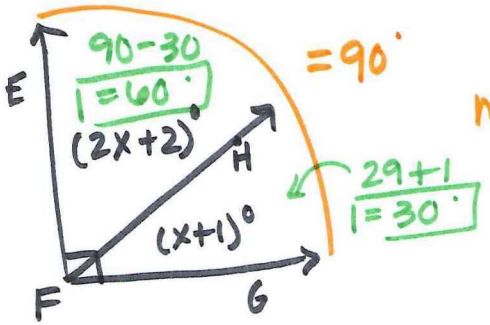
$10x-5 + 4x+3 = 180$

$14x - 2 = 180$

$+2 \quad +2$

$14x = 182$

$\boxed{x = 13}$



$m\angle EFH + m\angle HFG = m\angle HFG$

$2x+2 + x+1 = 90$

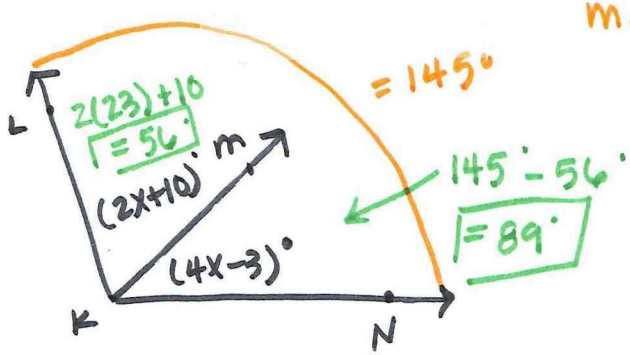
$3x + 3 = 90$

$-3 \quad -3$

$3x = 87$

$\boxed{x = 29}$

The $m\angle LKN = 145°$



$m\angle LKM + m\angle MKN = m\angle LKN$

$2x+10 + 4x-3 = 145$

$6x + 7 = 145$

$-7 \quad -7$

$6x = 138$

$\boxed{x = 23}$