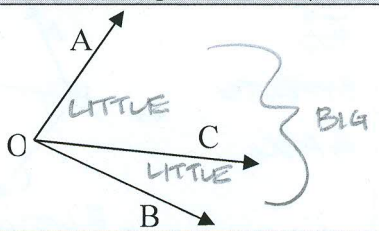
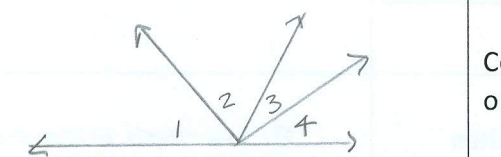
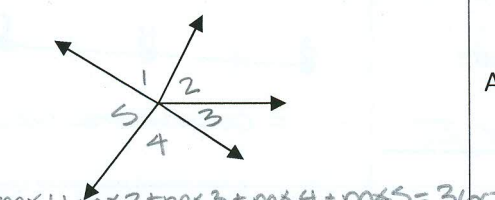
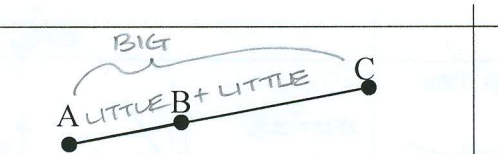
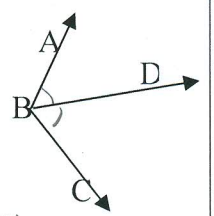
AXIOMS (Theorems, Corollaries, Postulates, Definitions)

Sum of Parts

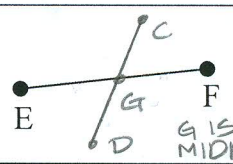
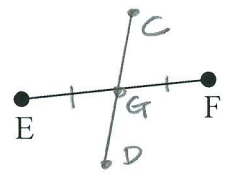
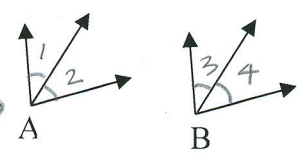
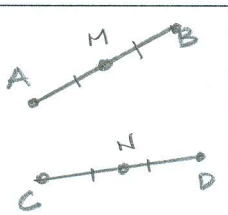
Conditional Statement	Diagram / Example	Stated as a Reason in a Proof
If point C is in the interior of $\angle AOB$, then $m\angle AOC + m\angle COB = m\angle AOB$		ANGLE ADDITION POSTULATE
Given a sequence of ***n*** consecutive adjacent angles whose interiors are all disjoint such that the angle formed by the first ***n – 1*** angles and the last angle are a linear pair, then the angle measures SUM TO 180°	 $m\angle 1 + m\angle 2 + m\angle 3 + m\angle 4 = 180°$ ($\angle$'s on a line)	Consecutive adjacent angles on a line sum to 180°
If the sum of the measures of all angles formed by three or more rays with the same vertex and whose interiors do not overlap, then the angle measures SUM TO 360°	 $m\angle 1 + m\angle 2 + m\angle 3 + m\angle 4 + m\angle 5 = 360°$ ($\angle$'s at a point)	Angles at a point sum to 360°
WILL BE FILLED IN LATER		
If A, B, and C are collinear, then AB + BC = AC		SEGMENT ADDITION POSTULATE
WILL BE FILLED IN LATER		

Bisectors

Conditional Statement	Diagram / Example	Stated as a Reason in a Proof

If $\overrightarrow{BD}$ bisects $\angle ABC$, then
$\angle ABD \cong \angle CBD$
 	
If $\angle ABD \cong \angle CBD$ and they are adjacent, then
$\overrightarrow{BD}$ BISECTS $\angle ABC$
Note conjunction!
	$\overrightarrow{BD}$ BISECTS $\angle ABC$ $\leftrightarrow$  $\cong$ ADJACENT HALVES	Definition of Angle Bisector
		Or
		Angle Bisector $\leftrightarrow$ two congruent adjacent angles

If B is the midpoint of $\overline{AC}$, then
$\overline{AB} \cong \overline{BC}$
 	
If $\overline{AB} \cong \overline{BC}$ and A, B, and C are collinear, then
B IS THE MIDPOINT OF $\overline{AC}$
Note conjunction!
	B IS THE MIDPOINT OF $\overline{AC}$ $\leftrightarrow$  $\cong$ COLLINEAR HALVES	Definition of a Midpoint
		or
		Midpoint $\leftrightarrow$ two congruent collinear segments

$\overline{CD}$ bisects $\overline{EF}$ at G and $\overline{EFG} \leftrightarrow$ G is the midpoint.	$\overline{CD}$ BISECTS $\overline{EF}$ @ G $\leftrightarrow$  G IS MIDPOINT OF $\overline{EF}$	SEGMENT BISECTOR $\leftrightarrow$ MIDPOINT
$\overline{CD}$ bisects $\overline{EF}$ at G and ~~$\overline{EFG}$~~ $\leftrightarrow$ $\overline{EG} \cong \overline{GF}$ AND $\overline{EFG}$	$\overline{CD}$ BISECTS $\overline{EF}$ @ G $\leftrightarrow$  $\overline{EFG}$	Segment bisector $\leftrightarrow$ 2 $\cong$ collinear segments. *Or* Definition of a Segment Bisector
If 2 $\cong$ angles are bisected, then their HALVES ARE CONGRUENT	$\angle A \cong \angle B$ & $\angle A$ & $\angle B$ BISECTED $\rightarrow$  $\angle 1 \cong \angle 2 \cong \angle 3 \cong \angle 4$	Halves of Congruent Angles are Congruent.
If 2 $\cong$ segments are bisected, then their HALVES ARE CONGRUENT	$\overline{AB} \cong \overline{CD}$ AND $\overline{AB}$ & $\overline{CD}$ BISECTED $\rightarrow$  $\overline{AM} \cong \overline{MB} \cong \overline{CN} \cong \overline{ND}$	HALVES OF CONGRUENT SEGMENTS ARE CONGRUENT