Properties, Definitions, Postulates, & Theorems	sons If a sa	Then	Picture/Example
	Algebraic Prope	rties of Equality	
Addition POE	If a = b, $m \angle 1 = m \angle 3$	Then a + 3 = b + 3 $m \angle 1 + m \angle 2 = m \angle 3 + m \angle 2$	lf x-5=10, then x=15.
Subtraction POE	If $AB = CD$ $m \angle ABC = m \angle DEF$	Then AB - EF = CD - EF $m \angle ABC - m \angle 2 = m \angle DEF - m \angle 2$	1f 2x+7=14 then 2x=7
Multiplication POE	If a = b	<b>Then B = 00 00 = 8A</b> 3a = 3b	$ \begin{array}{c} \text{If } \frac{1}{2}a = 10 \\ \text{then } a = 20 \end{array} $
Division	If 4x = 16	Then x = 4	f   2a = 10
POE	lhen IF.		then $a=5$
Substitution	If a subassimulation for a subassimulation f	Then A and b can be substituted for each other in any equation or inequality	Def 8
	y= 3x+ 5 and x=2	y=3(2)+5 0r y=11	Segment Addition
Distributive POE	If	Then	Sea Add. Post
	2(x+5)	2x+ 10	Angle Addition Postulate
Combine Like	If	Then	tood hhad
Terms (C.L.T.)	Like terms are on the SAME SIDE of the equation	You can simplify them.	5x+2x = 35 7x =35
Reflexive POE	If a is a number	Then a = a The middle mid	$AB = AB$ $m \angle 2 = m \angle 2$
Symmetric POE	If AB = CD	Then CD = AB	$ \begin{array}{ll} \text{If } x = 7 + a \\ \text{then } 7 + a = x \end{array} $
Transitive POE	If AB = CD , CD = EF	Then AB = EF	Linear Pair Theorem

	Algebraic Propert		
	If	Then	$\overline{AB} \cong \overline{AB}$
Reflexive	a is a number	a ≅ a	∠2 ≅ ∠2
Reflexive		d = b	and this halo. A
POC		0 - 0	Addition
A TRUT	$m \ge 1 + m \ge 2 + m \le 2$	Then	1C E209
Symmetric POC	If		l+_5=x,
1. 1. 1. 1. 1. 1. 1. 1.	AB ≅ CD	CD ≅ AB	Hanin FR
FEVE North		AB = CD	then $x = 5^{2}$
	If	Then 1	X1 ~x 2
MIT of MI	AB ≅ CD , CD ≅ EF	AB≅EF	V2 242
<b>Transitive POC</b>	AB = CO, $CO = EF$		+ L = + 2 Route all alt hulk
Hren 0=20		ther	1 ¥1 ≅43.
	Coomotnio	Dramoutica	904
01=02 JI		Properties	Division
Definition of	If Segments are a	Then If s	F= RW, then ST
congruence	Segments are ≅	Their lengths are =	
Def ≅	Angles are ≅	Their measures are =	\$2, then
	LIDES TOT OSCIDILIZADE SE TREL O ONE A	Then	MAI = M44
	If Ris between A and C	AB + BC = AC	nonnnusane
Segment Addition	B is between A and C	AB + BC = AC	A B (
Postulate			10100-10
Seg Add Post	Then		AB+BC = AC
5	If	Then	Distributive
Angle Addition	D is in the interior of ∠ABC		209
Postulate		$m \angle ABD + m \angle DBC = m \angle ABC$	0
Add Post	Then		B
Vertical Angle	ou can simplify them. HI	Then the see on the skill	1 - 1
Theorem	2 ∠'s are vertical ∠'s	The angles are ≅	2
		ROPTO ID -	4
lert 4 thrm		41=43; 42=44)	
on - on	If B is the <u>midpoint</u> of	Then	A B C
Definition of Midpoint	$\frac{B}{AC}$ is the <u>mappini</u> of	$\overline{AB} \cong \overline{BC}$	Reflexive
Def middt			
er moh	If	Then	109
Definition of bisector	hen	IT.	Ă B C
Service and The	$\overrightarrow{BD}$ bisects $\angle$ ABC	∠ ABD ≅ ∠DBC	Symmetric POB
HARN JACOF.	B bisects <b>AC</b>	$\overline{AB} \cong \overline{BC}$	A
let of	D DISEULS AL		D D
bised	Then [[ ]		B
procu	AB = 8P	A8 = C0 _ C0 = EE	é
	If a	Then	Transitive FOE
Linear Pair Theorem	2 ∠'s form a linear pair	The two angles are supplementary	10
	$\angle 1$ and $\angle 2$ are a linear	(1 and (1 and sumpliment)	1/2
	pair	$\angle 1$ and $\angle 1$ are supplementary	A B C

	If non	Then	
Definition of Supplementary Angles	2 angles are supplementary ∠3 and ∠4 are supplementary	Their measures have a sum of 180° m∠3 + m∠4 = 180°	3/4
Det Supp 4	If		
Definition of Complementary Angles Def Comp 4	2 angles are complementary ∠1 and ∠2 are complementary	Then Their measures have a sum of 90° m∠1 + m∠2 = 90°	2 lines L to same 1 1 2 lines // 2
ver comp r	If	Then	t
Def. of right $\angle$	∠ABC is a <u>right</u> angle	m∠ABC = <u>90°</u> g owi	lines
Right angle ≅ theorem	If Angles are right angles	Then  f They are congruent (all right angles are ≅)	41 and $42$ are right $4$ , then 41 = 42
Def. of $\perp$	<b>If</b> Two lines are perpendicular	Then They form right angles	
d de la		∠CDB is a right angle	
Congruent Complements theorem	If Two angles are complementary to the same angles. ∠1 is complementary to ∠2 ∠3 is complementary to ∠2	Then The two angles are congruent $\angle 1 \stackrel{\frown}{=} \angle 3$	
Congruent Supplements theorem	If Two angles are supplementary to the same angles. ∠1 is supplementary to ∠2 ∠1 is supplementary to ∠3	Then The two angles are congruent $\angle 2 \stackrel{\checkmark}{=} \angle 3$	
$\cong \angle$ 's sup $\rightarrow$ right $\angle$ 's	If Two congruent angles are supplementary	Then Then each angle is a right angle	
Pa	rallel/Perpendicular Lin	es Properties and Theorem	S
h 2 3	If		Ce
<b>Def. of</b> ⊥ bisector	A line is perpendicular to a segment at its midpoint	I hen It is the perpendicular bisector	
2 intersecting lines form lin. Pr. Of $\cong \angle$ 's $\rightarrow$ lines $\perp$ .	If Two intersecting lines form a linear pair of congruent angles	Then The lines are perpendicular	