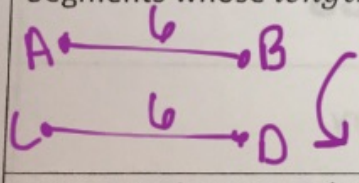
Unit 5

Lesson 1

Key Vocabulary

Picture This.....draw an example in each box.

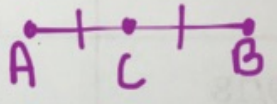
Congruent Segments:
Segments whose *lengths are equal.*



$\overline{AB} \cong \overline{CD}$

$AB = CD$

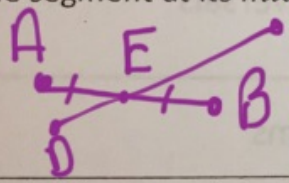
Midpoint: A point that divides a segment into 2 *congruent segments.*



$\overline{AC} \cong \overline{BC}$

$AC = BC$

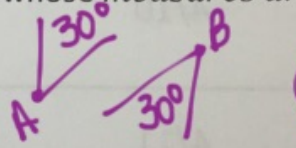
Segment Bisector: A line (or part of a line) that intersects the segment at its *midpoint.*



$\overline{AE} \cong \overline{BE}$

$AE = BE$

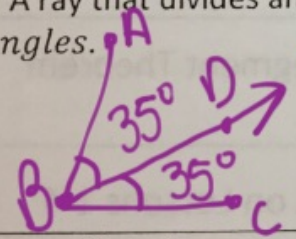
Congruent Angles:
Angles whose *measures are equal.*



$\angle A \cong \angle B$

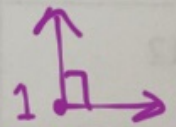
$m\angle A = m\angle B$

Angle Bisector: A ray that divides an angle into 2 *congruent angles.*



$\angle ABD \cong \angle CBD$

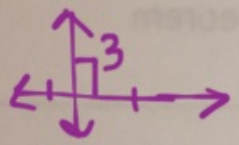
Right Angle: Angle whose measure is 90°



$m\angle 1 = 90°$

THEOREM: All right angles are *congruent.*

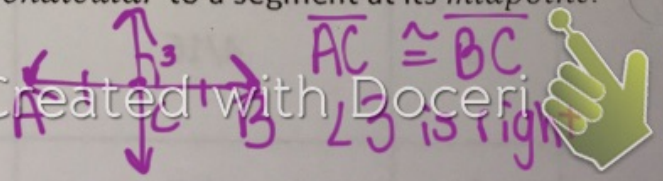
Perpendicular Lines: Lines (or parts of lines) that intersect to form a *right angle.*



$\angle 3$ is right

$m\angle 3 = 90°$

Perpendicular Bisector: Line (or part of a line) that is *perpendicular* to a segment at its *midpoint.*



$\overline{AC} \cong \overline{BC}$

$\angle 3$ is right

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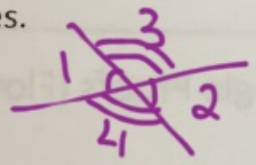
Vertical angles: Two nonadjacent angles formed by 2 intersecting lines.

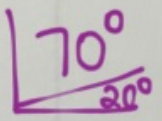


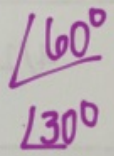
$\angle 1 \cong \angle 2$

$\angle 3 \cong \angle 4$

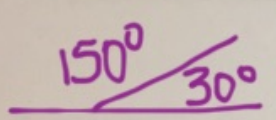
THEOREM: Vertical Angles are *congruent*.

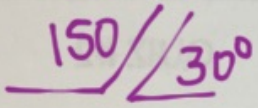
Complementary angles: Two angles whose *measures* have a *sum is* 90°



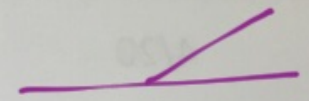


Supplementary angles: Two angles whose *measures* have a *sum is* 180°



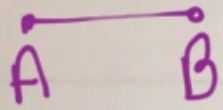


Linear pair: Two adjacent angles whose non-commo sides are opposite rays.



POSTULATE: Linear Pairs are *supplementary*.

Reflexive Property of Congruence: A geometric figure is *congruent to itself*.



$\overline{AB} \cong \overline{AB}$

Transitive Property of Congruence: If *one* geometr figure is congruent to a *second* geometric figure an the *second* geometric figure is congruent to a *third* geometric figure, then the *first* and *third* figures are *congruent*.

$\angle A \cong \angle B$

$\angle B \cong \angle C$

then $\angle A \cong \angle C$

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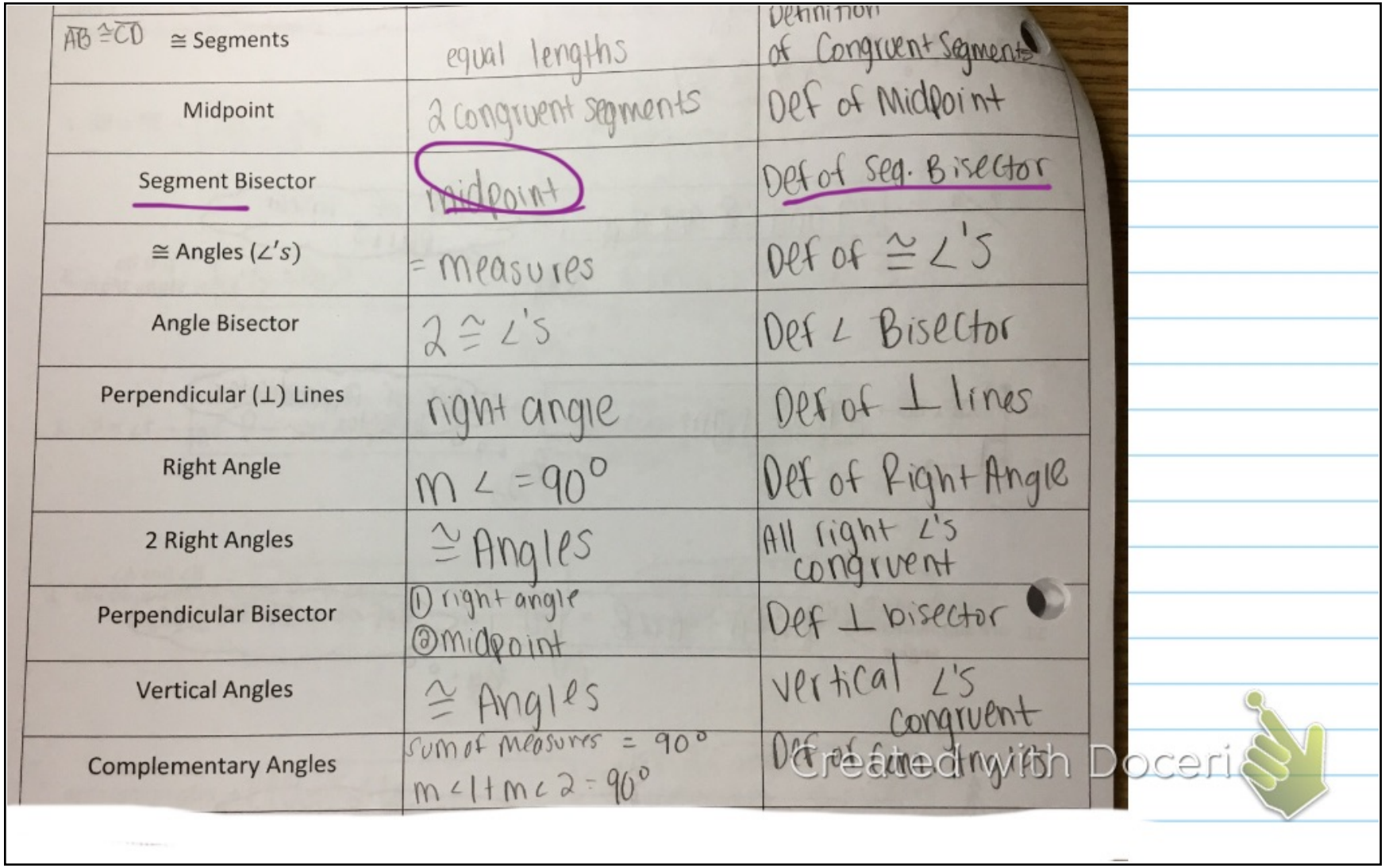

$\overline{AB} \cong \overline{CD}$ ≅ Segments	equal lengths	Definition of Congruent Segments
Midpoint	2 congruent segments	Def of Midpoint
Segment Bisector	midpoint	Def of Seg. Bisector
≅ Angles (∠'s)	= measures	Def of ≅ ∠'s
Angle Bisector	2 ≅ ∠'s	Def ∠ Bisector
Perpendicular (⊥) Lines	right angle	Def of ⊥ lines
Right Angle	m∠ = 90°	Def of Right Angle
2 Right Angles	≅ Angles	All right ∠'s congruent
Perpendicular Bisector	① right angle ② midpoint	Def ⊥ bisector
Vertical Angles	≅ Angles	vertical ∠'s congruent
Complementary Angles	sum of measures = 90° m∠1 + m∠2 = 90°	Def of [illegible]

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Complementary Angles	Sum of measures = 90° $m\angle 1 + m\angle 2 = 90°$	Def of Com. Angles
Supplementary Angles	sum = 180° $m\angle 1 + m\angle 2 = 180°$	Def of Supp ∠'s
Linear Pair	∠'s are supp	Linear pairs supplementary
Shared **Angle**	∠ is ≅ to itself	Reflexive Prop of ≅
Shared **Side**	side is ≅ to itself	⇓
$\angle A \cong \angle B$ and $\angle B \cong \angle C$	$\angle A \cong \angle C$	Transitive Prop of ≅
ΔABC has a right angle	△ABC is right triangle	Def. of Right △

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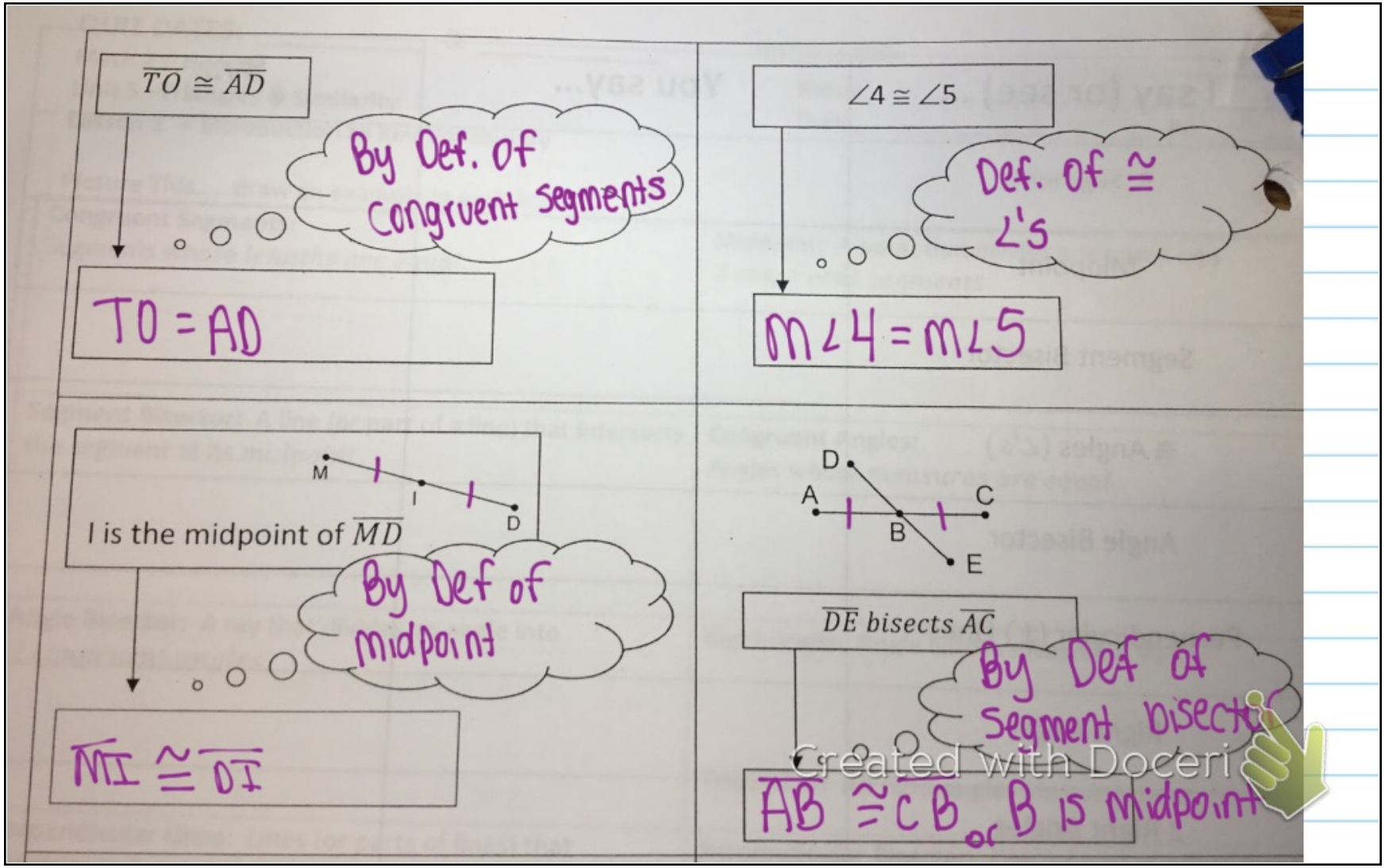
$\overline{TO} \cong \overline{AD}$
By Def. of Congruent Segments
TO = AD
$\angle 4 \cong \angle 5$
Def. of ≅ ∠'s
m∠4 = m∠5
M
I
D
I is the midpoint of $\overline{MD}$
By Def of midpoint
$\overline{MI} \cong \overline{DI}$
D
A
C
B
E
$\overline{DE}$ bisects $\overline{AC}$
By Def of Segment bisector
$\overline{AB} \cong \overline{CB}$ or B is midpoint
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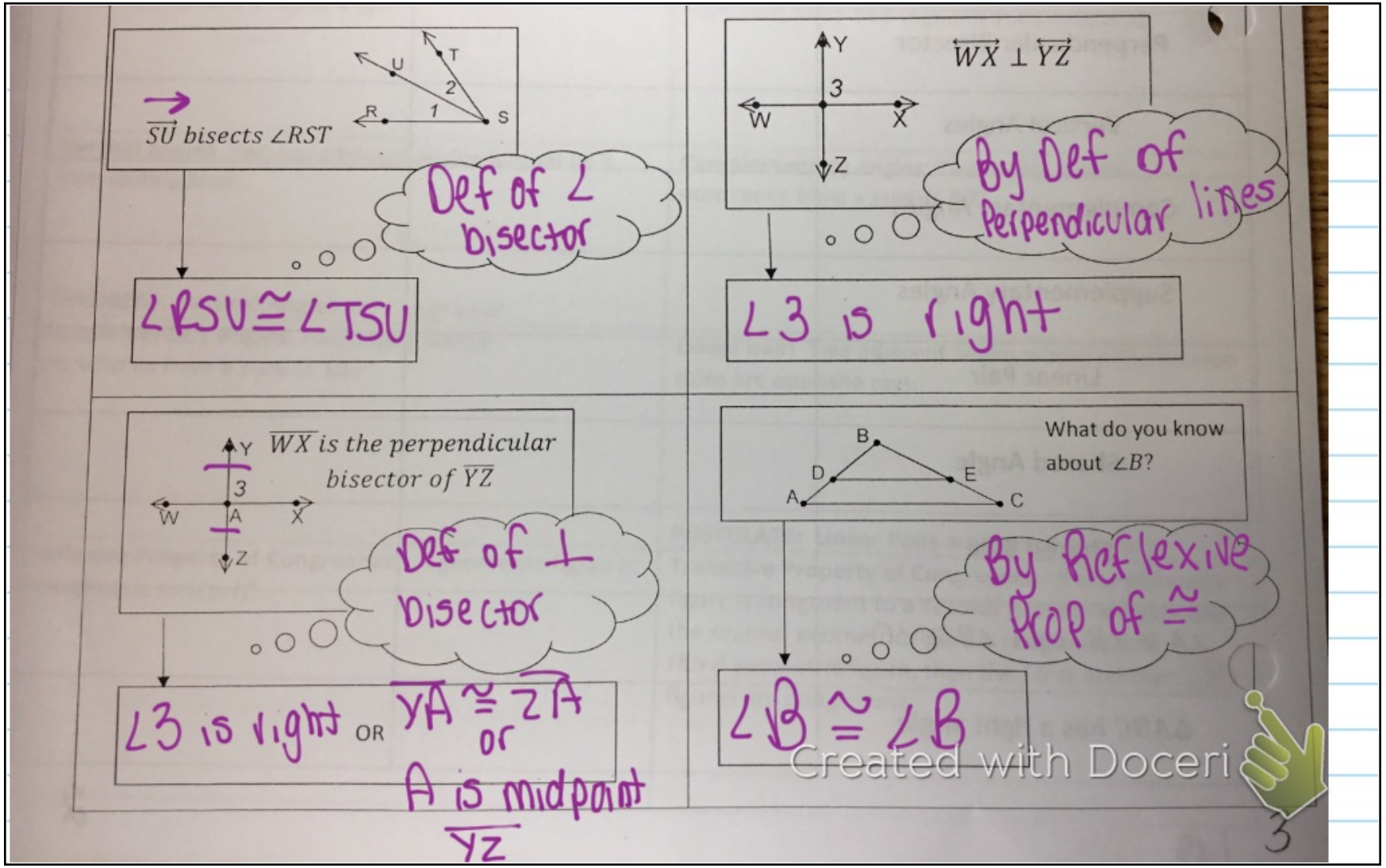
$\overrightarrow{SU}$ bisects $\angle RST$
U
T
2
R
1
S
Def of ∠ bisector
∠RSU ≅ ∠TSU
$\overleftrightarrow{WX} \perp \overleftrightarrow{YZ}$
Y
3
W
X
Z
By Def of perpendicular lines
∠3 is right
$\overline{WX}$ is the perpendicular bisector of $\overline{YZ}$
Y
3
W
A
X
Z
Def of ⊥ bisector
∠3 is right OR $\overline{YA} \cong \overline{ZA}$ or A is midpoint $\overline{YZ}$
What do you know about ∠B?
B
D
E
A
C
By Reflexive Prop of ≅
∠B ≅ ∠B
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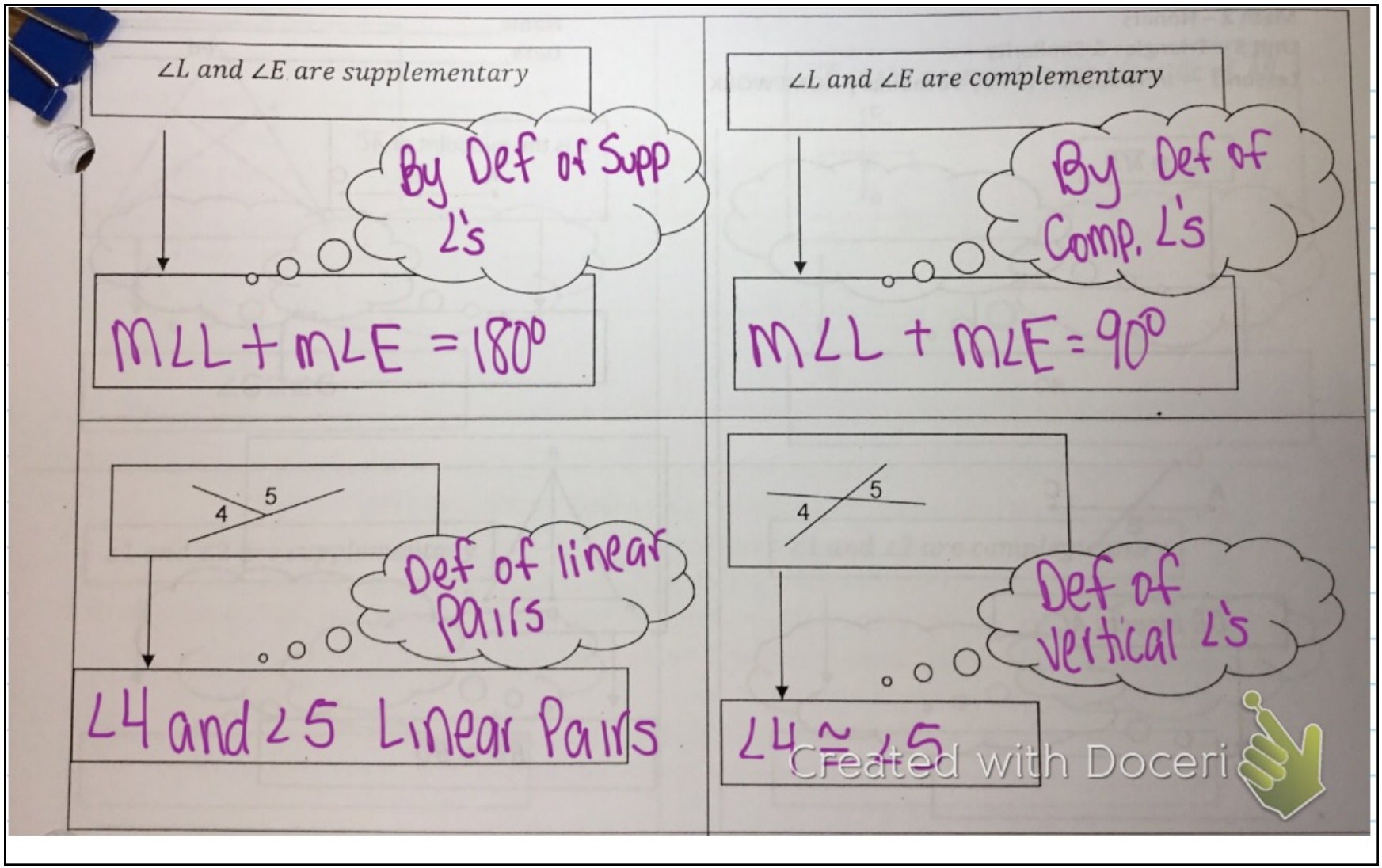
∠L and ∠E are supplementary
By Def of Supp ∠'s
m∠L + m∠E = 180°
∠L and ∠E are complementary
By Def of Comp. ∠'s
m∠L + m∠E = 90°
4
5
Def of linear pairs
∠4 and ∠5 Linear Pairs
4
5
Def of vertical ∠'s
∠4 ≅ ∠5
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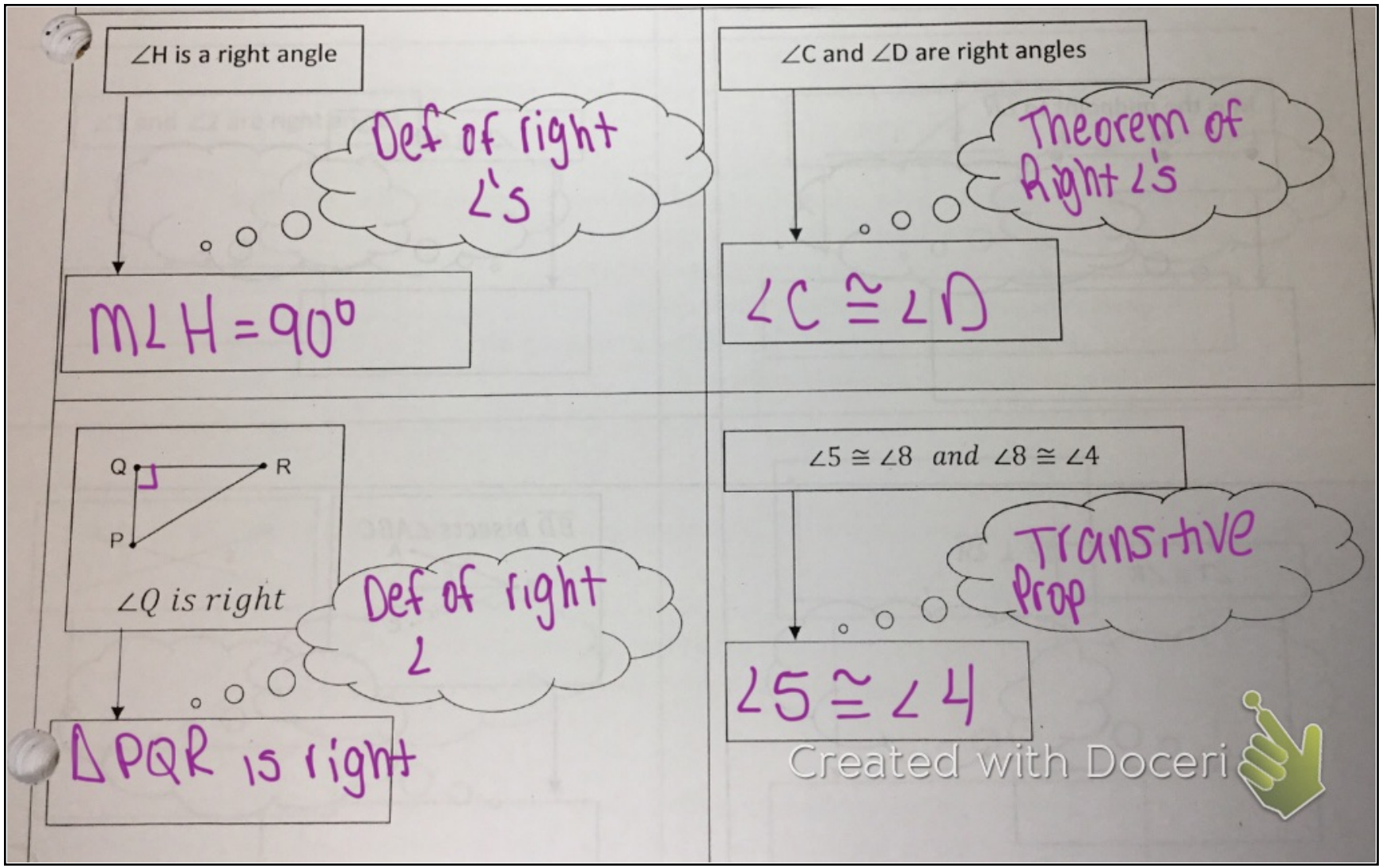
∠H is a right angle
Def of right ∠'s
m∠H = 90°
∠C and ∠D are right angles
Theorem of Right ∠'s
∠C ≅ ∠D
Q
R
P
∠Q is right
Def of right ∠
ΔPQR is right
∠5 ≅ ∠8 and ∠8 ≅ ∠4
Transitive Prop
∠5 ≅ ∠4
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Page 5-6 HW

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