SEMESTER ONE: FINAL TEST REVIEW

Unit 1 Transformations

- For each Transformation, describe how each point should move.

1. T:(x, y) → (x + a, y + b):

   Every point moves a units (left if a is negative/right if a is positive) and b units (down if b is negative and up if b is positive.

2. R_m:

   Every point maps to its image, forming a line that is **perpendicular** to the line "m" (you would put the specific line for your problem in place of "m"), with both image and pre-image being **equidistant** (same distance) from the line "m".

Unit 1: Transformations

- For each Transformation, describe how each point should move.

3. $R_{O,90°}$:

Every point moves $90°$ counterclockwise about the origin.

4. H_O:

Every point moves $180°$ about the origin (in either direction).

Unit 1: Transformations

- For each Transformation, describe how each point should move.

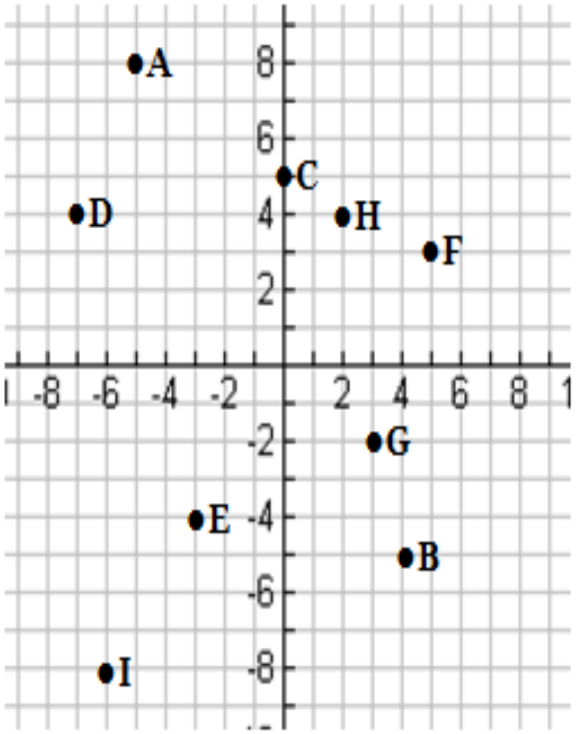
5. $D_{O,k}$:

   Every point moves to a point "k" times the distance from the center O.

Unit 1: Transformations

You may use the coordinate plane to determine each of the following. Identify the type of transformation and determine the image. Give your answer for the image as a coordinate point.

	Transformation Type	Image
10. $T: A \rightarrow (x+3, y-5)$	Translation	$(-2,3)$
11. $R_x: B \rightarrow (\_,\_)$		
12. $R_y: C \rightarrow (\_,\_)$		
13. $R_{y=x}: D \rightarrow (-7,4)$	Reflection	$(4,-7)$
14. $R_{90}: E \rightarrow (\_,\_)$		
15. $R_{-90}: F \rightarrow (5,3)$	Rotation	$(3,-5)$
16. $D_{0,3}: G \rightarrow (\_,\_)$		
17. $D_{0,-2}: H \rightarrow (2,4)$	Dilation	$(-4,-8)$
18. $D_{0,\frac{1}{2}}: I \rightarrow (-6,-8)$	Dilation	$(-3,-4)$



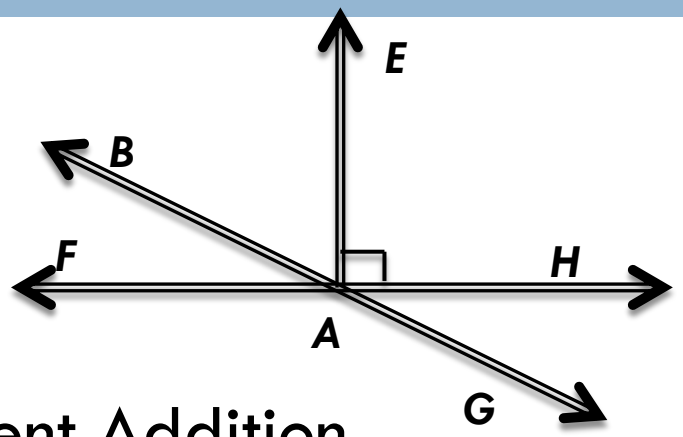
Unit 2: Geometric Vocabulary

- Recall some of the key terms from this section:

Point	Line	Plane
Collinear	Coplanar	Intersect
Contains	Opposite	Adjacent
Segment Addition	Angle Addition	Midpoint
Angle Bisector	Supplementary	Complementary
Vertical	Congruent	

Unit 2: Geometric Vocabulary

- Use these terms to fill in blanks:



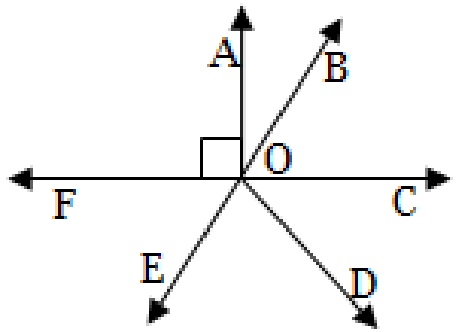
1. $FA + AH =$ FH by Segment Addition Postulate.
2. $< BAF \cong <$ HAG because they are Vertical angles.
3. $< FAB$ and $< BAE$ are Complementary angles because they add up to $90°$.

Unit 2: Geometric Vocabulary

- Be ready to solve equations using segment and angle addition:

3.) $m < FOE = 3x - 1$, $m < EOD = 72°$, and $m < FOD = 6x + 11$

$$3x - 1 + 72 = 6x + 11$$
$$3x + 71 = 6x + 11$$
$$3x = 60$$
$$x = 20$$



4.) $EB = 6x - 8$, $OB = 12$, and $OE = 4x - 2$

$$4x - 2 + 12 = 6x - 8$$
$$4x + 10 = 6x - 8$$
$$2x = 18$$
$$x = 9$$

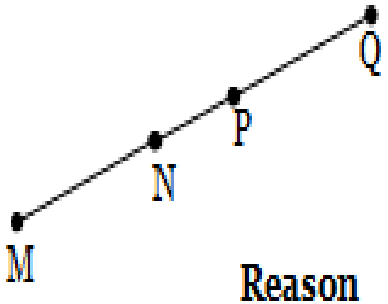
Unit 3: Proofs

- Be ready for another round of proofs:

Proof 1:

Given: MP = NQ

Prove: MN = PQ



Statement	Reason
1. MP = NQ	1. Given
2. $NP = NP$	2. Reflexive
3. MP = MN + NP NQ = PN + PQ	3. Segment Addition Postulate
4. $MN + NP = NP + PQ$	4. Substitution
5. $MN = PQ$	5. Subtraction

Unit 4: Parallel Lines

- Use the properties of parallel lines to find angle measures. Remember the big three that we focused on in this unit:

Corresponding Angles are Congruent

$$Corr.\angle' s\ are\ \cong$$

Alternate Interior Angles (Alt. Int.) are Congruent

$$Alt.\ Int.\angle' s\ are\ \cong$$

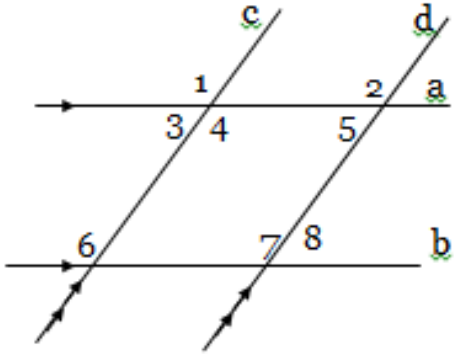
Same-Side Interior Angles (S-S Int.) are Supplementary

$$S-S\ Int.\angle' s\ are\ supp.$$

Unit 4: Parallel Lines

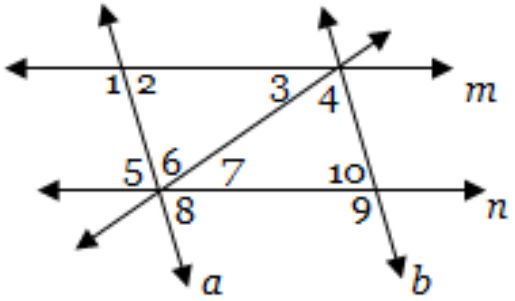
- Use those properties to make equations and find angle measures using a diagram (you may also be asked to explain your answers):

1. If $m\angle 1 = 115^\circ$, then $m\angle 2 =$ 115° because if $c \parallel d$, Corr. angles are $\cong$.
2. If $m\angle 5 = 70^\circ$, then $m\angle 8 =$ 70° because if $a \parallel b$, Alt. Int. angles are $\cong$.
3. If $m\angle 4 = 120^\circ$, then $m\angle 5 =$ 60° because if $c \parallel d$, S-S Int. angles are $supp.$.



Unit 4: Parallel Lines

- Use those properties to make equations and find angle measures using a diagram (you may also be asked to explain your answers):



- Ex: $m < 8 = 4x + 12$ and $m < 2 = 6x - 4$

$$4x + 12 = 6x - 4$$

$$16 = 2x$$

$$8 = x$$

Unit 4: Parallel Lines

- You can also use those properties to identify the existence of parallel lines in a diagram

1. $< 2 \cong < 9$

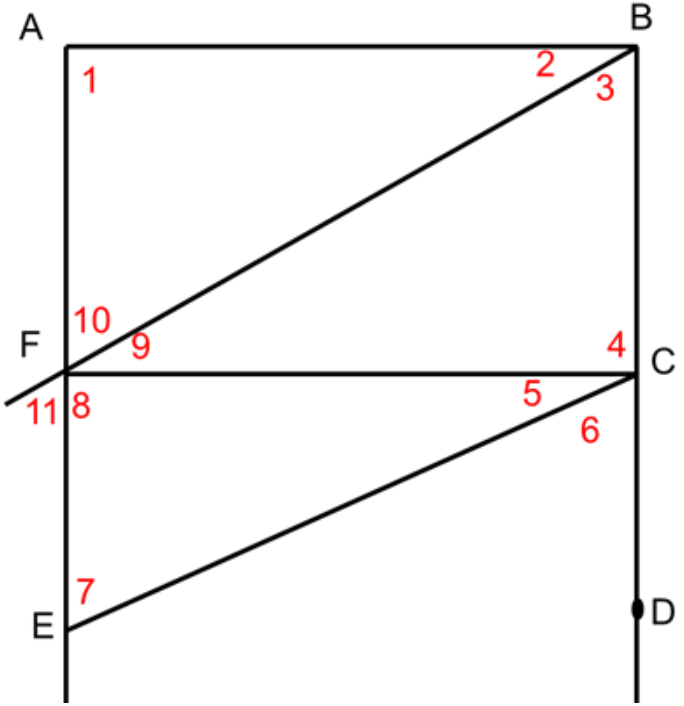
   $\overline{AB} \parallel \overline{FC}$

2. $m < 2 = m < 5$

   None

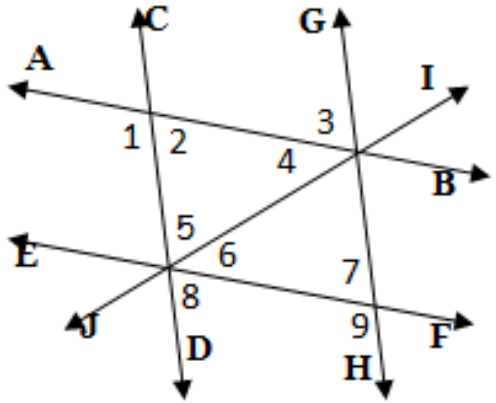
3. $< 6 \cong < 7$

   $\overline{EF} \parallel \overline{CD}$



Unit 4: Parallel Lines

- You can also use those properties to identify the existence of parallel lines in a diagram



4. $m\angle 3 = m\angle 7$ Yes; $\overline{AB} \parallel \overline{EF}$

Explain: Because when lines ACBAT and Corr. <'s are ≅, then lines are $\parallel$.

Unit 5: Triangles

- Remember the 5 Postulates/Theorems we use for Proving That Triangles are congruent:
- Side-Side-Side **SSS**
- Side-Angle-Side **SAS**
- Angle-Side-Angle **ASA**
- Angle-Angle-Side **AAS**
- Hypotenuse-Leg **HL**

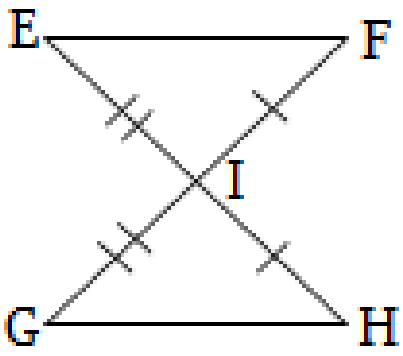
- Oh, and Let's not forget about…

CPCTC

Unit 5: Triangles

- Use these postulates/theorems to label diagrams and name the appropriate congruent statements:

2.



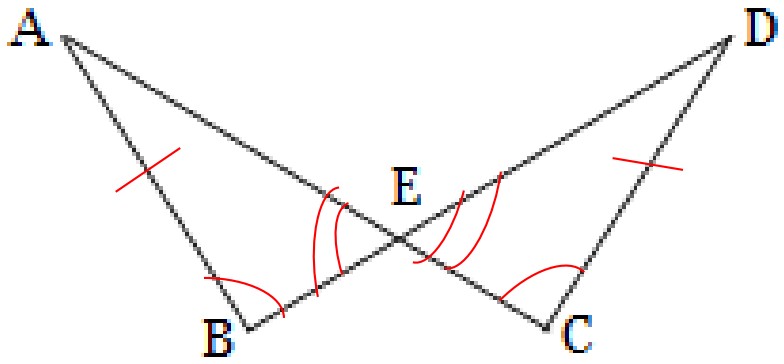
S	$\overline{FI} \cong \overline{HI}$
A	$< EIF \cong < GIH$
S	$\overline{EI} \cong \overline{GI}$

Δ EFI $\cong \Delta$ GHI

Unit 5: Triangles

- Use these postulates/theorems to label diagrams and name the missing parts to satisfy them:

6. $\angle B \cong \angle C$
   $\overline{AB} \cong \overline{CD}$

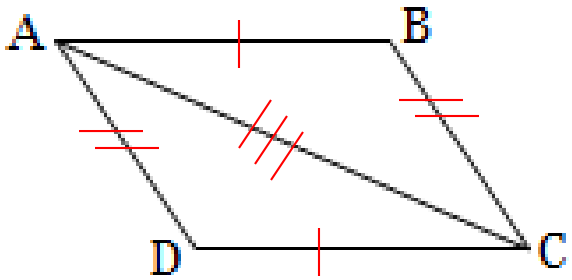


AAS Theorem

Unit 5: Triangles

- Use these postulates/theorems to label diagrams and name the missing parts to satisfy them:

9. $\overline{AB} \cong \overline{CD}$
$\overline{AD} \cong \overline{BC}$

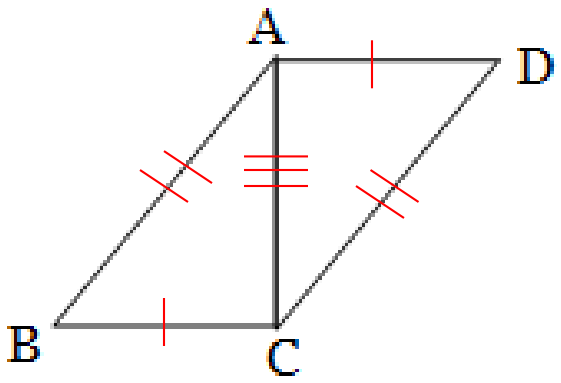


SSS Postulate

Unit 5: Triangles

- Use these postulates/theorems to label diagrams and name the appropriate congruent statements:

$\overline{DA} \cong \overline{BC}$; $\overline{DC} \cong \overline{BA}$



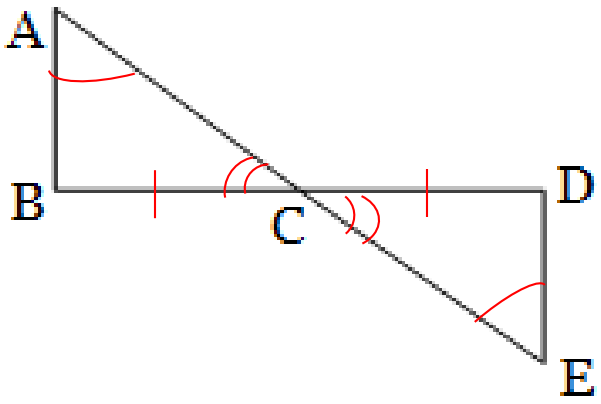
$\Delta ABC \cong \Delta$ CDA

by SSS

Unit 5: Triangles

- Use these postulates/theorems to label diagrams and name the appropriate congruent statements:

C is the midpoint of $\overline{BD}$;
$\angle A \cong \angle E$



$\Delta ABC \cong \Delta EDC$

by AAS

Unit 6: Quadrilaterals

- Remember the properties of the Quadrilaterals, and how to use them to make equations.

Complete the chart by places check marks in the appropriate places.

	Property	Parallelogram	Rectangle	Rhombus	Square
1)	Opposite sides are parallel	X	X	X	X
2)	Opposite sides are congruent	X	X	X	X
3)	Opposite angles are congruent	X	X	X	X
4)	A diagonal forms two congruent angles	X	X	X	X
5)	Diagonals bisect each other	X	X	X	X
6)	Diagonals are congruent		X		X
7)	Diagonals are perpendicular			X	X
8)	A diagonal bisects two angles			X	X
9)	All angles are right angles		X		X
10)	All sides are congruent			X	X

Unit 6: Quadrilaterals

- Remember the properties of the Quadrilaterals, and how to select the most best one from a given property.

Match each shape name to the properties it has. Answers will be repeated.

[A] parallelogram [B] rectangle [C] rhombus [D] square [E] trapezoid

1. A opposite sides are congruent
2. A opposite angles are congruent
3. B diagonals are congruent
4. D all sides and angles are congruent
5. C diagonals are perpendicular
6. A diagonals are bisected
7. C angles are bisected
8. B all angles are right angles
9. A opposite sides are parallel
10. E not a parallelogram

Unit 6: Quadrilaterals

- And remember the Trapezoid…
- It is NOT a Parallelogram! It has its own Properties.
- Ex: Find the value of x in the figure.

$x + 10 = \frac{1}{2}(27 + 17)$ (Why?)

$x + 10 = \frac{1}{2}(44)$

$x + 10 = 22$

$x = 12$