Name: Key Class Period: _____

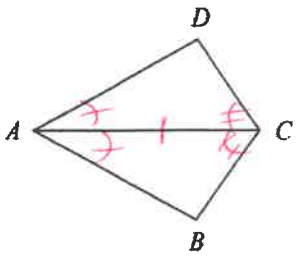
Midterm Review (Paper Based Part)

1.)

Given: $\overline{AC}$ bisects $\angle DAB$

$\overline{AC}$ bisects $\angle DCB$

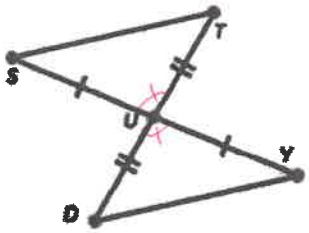
Prove: $\angle D \cong \angle B$



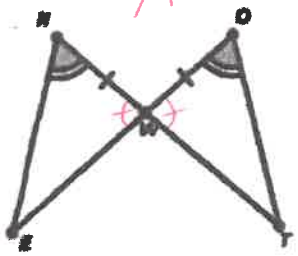
Statements	Reasons
1.) $\overline{AC}$ bisects $\angle DAB$	1.) Given
2.) $\angle DAC = \angle BAC$	2.) def. of $\angle$ bisector
3.) $\overline{AC}$ bisects $\angle DCB$	3.) Given
4.) $\angle DCA \cong \angle BCA$	4.) Definition of Angle Bisector
5.) $AC = AC$	5.) Reflexive Property
6.) $\triangle CAB = \triangle$ CAD	6.) ASA
7.) $\angle D \cong \angle B$	7.) CPCTC

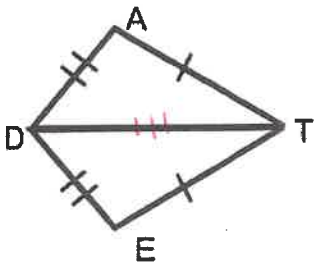
2.) Write congruency statements for each triangle and which triangle congruency applies: SSS, SAS, ASA, AAS

SAS

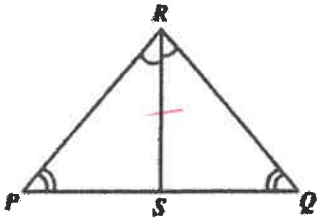


ASA





SSS



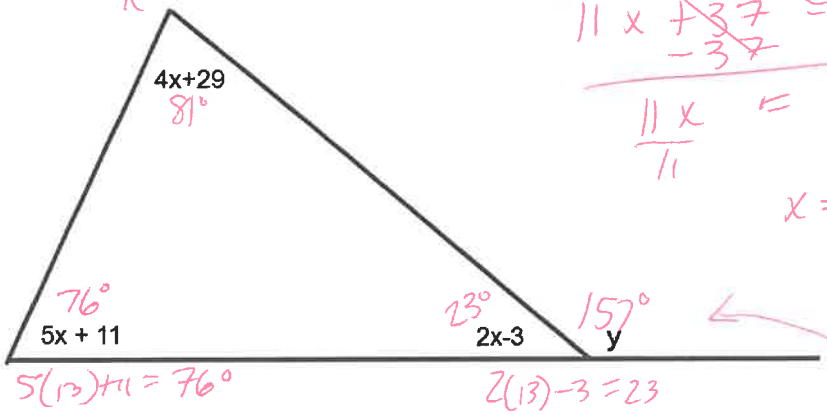
AAS

3.)

Given: 5(x + 2) = -3x - 6 Prove: x = -2

Statements	Reasons
1. 5(x + 2) = -3x - 6	1. Given
2. 5x+10 = -3x-6	2. Distributive Property
3. 8x + 10 = -6	3. Subtraction P.O.E.
4. 8x = -16	4. Subtraction Property of Equality
5. x = -2	5. Division P.O.E

4.) Solve for the value of x and y in the triangle below and then solve for the measure of each of the angles.



4(13)+29=81

4x+29+5x+11+2x-3=180

11x+37=180

-37 -37

11x = 143

11x/11 = 143/11

x = 13

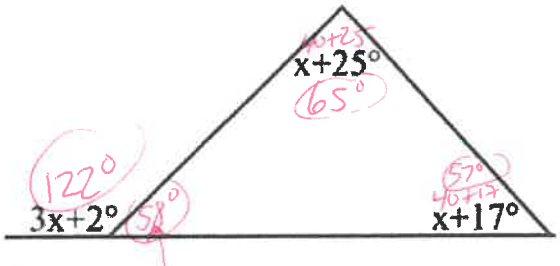
✓ 81+76+23=180

5(13)+11=76°

2(13)-3=23

180 - 23 = 157

5.) Solve for the value of x and each of the angles.



3(40)+2

120+2

122

180 - 122 = 58

x + 25 + x + 17 = 3x + 2

2x + 42 = 3x + 2

-2x -2x

42 = x + 2

-2 -2

40 = x

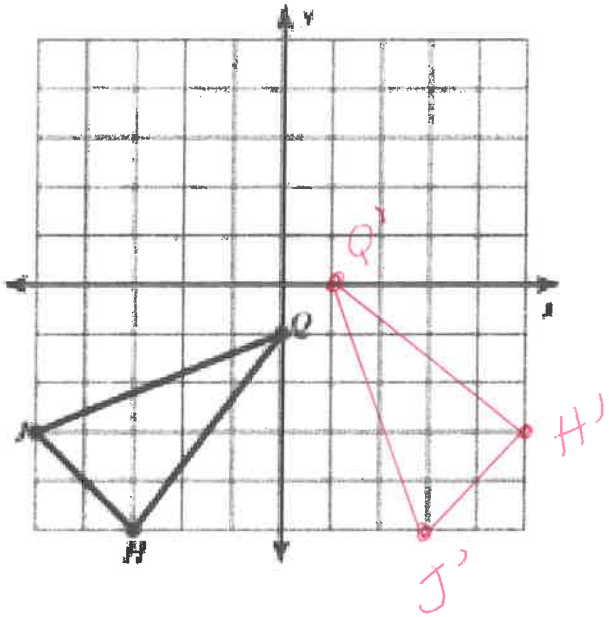
Rules ccw

$-y, x$ 90°

$-x, -y$ 180°

$y, -x$ 270°

6.) Rotate the figure 90 degrees counterclockwise.



$Q(0,-1)$

$Q'(1,0)$ ☆

$J(-5,-3)$

$J'(3,-5)$

$H(-3,-5)$

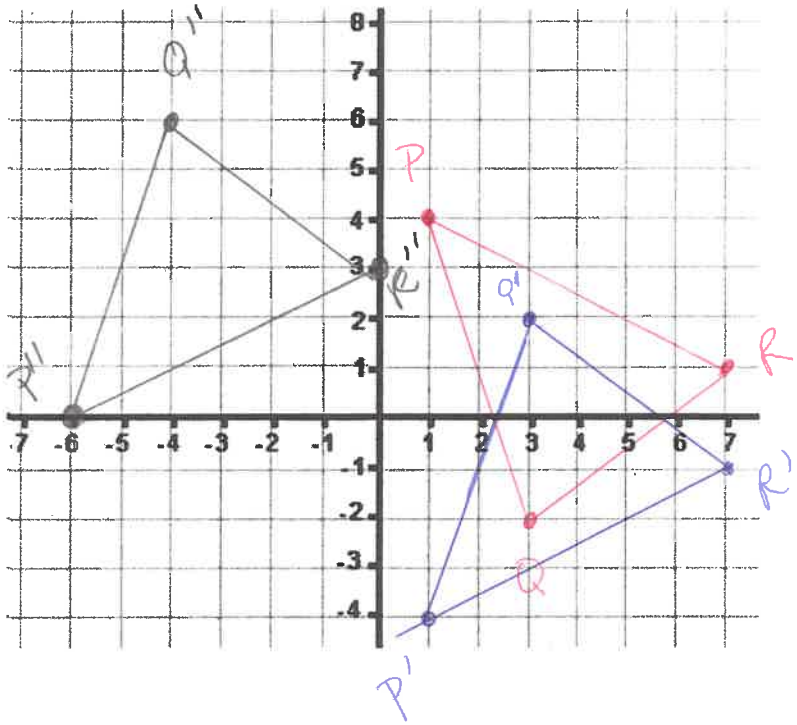
$H'(5,-3)$

7. The vertices of PQR are P(1, 4), Q(3, -2), and R(7, 1). Complete the composition of the given transformations by graphing the preimage PQR and its image. (Red - original)

Reflection: In the x-axis (Blue)'

Translation: (x, y) → (x- 7, y + 4)

(Pencil)''



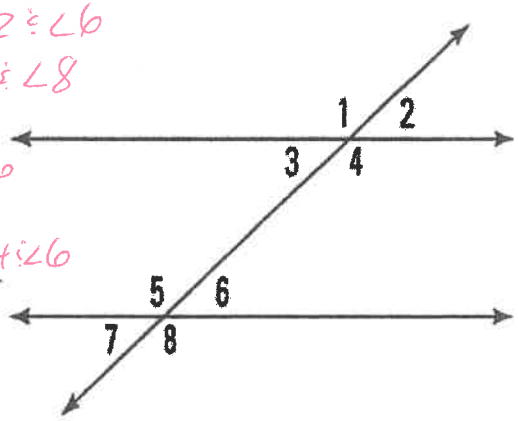
Final Coordinates

$P''(-6,0)$

$Q''(-4,6)$

$R''(0,3)$

8.) Name a pair of the following angles and explain whether they are congruent or supplementary.



Corresponding Angles: $\cong$ ∠1 ≅ ∠5 ∠4 ≅ ∠8 ∠3 ≅ ∠7 ∠2 ≅ ∠6

Alternate Interior Angles: $\cong$ ∠4 ≅ ∠5, ∠3 ≅ ∠6

Consecutive Interior Angles: 180° ∠3 ≅ ∠5, ∠4 ≅ ∠6

Alternate Exterior Angles: $\cong$ ∠1 ≅ ∠8, ∠2 ≅ ∠7

Vertical Angles: $\cong$ ∠7 ≅ ∠6 ∠5 ≅ ∠8 ∠1 ≅ ∠4 ∠2 ≅ ∠3

9.) Name the four transformations completed in Geometry. Which ones are considered Rigid Motion. What does Rigid Motion mean? → Same size : shape (same distances preserves distance)

☆ Translation (slide) ☆ Reflection (flip)

☆ Rotation (turn)

Dilation — NOT Rigid Motion

10.) Complete the congruency statements.

▲DOL ≅ ▲FAN

<D = < F $\overline{DO}$ = $\overline{FA}$ <N = < L $\overline{DL}$ = $\overline{FN}$