**Unit 1 Review Guide Key**

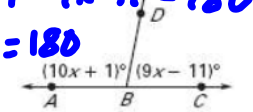
Geometry 1- Angles, Triangles, Transformations Review

Name: _____ Date: _____

**Unit 1 Test Review**

**Solve for the given variable:**

1)

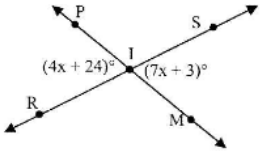



$18x+1+9x-11=180$

$19x-10=180$

$19x=190$ $x=10$

2)

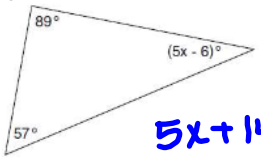



$4x+24=7x+3$

$21=3x$

$7=x$

3)



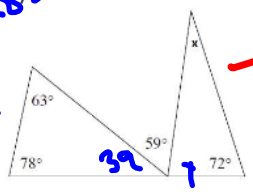

$57+89+5x-6=180$

$5x+140=180$

$5x=40$

$x=8$

4)




$63+78=141$

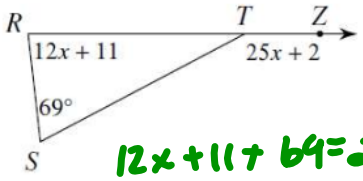
$180-141=39$

$59+39+y=180$ $y=82$

$82+72+x=180$

$x=26$

5)




$12x+11+69=25x+2$

$12x+80=25x+2$

$78=13x$

$x=6$

9) The measure of one angle is 38 less than the measure of its supplement. Find the measure of each angle.

$x+x-38=180$ $2x=218$ $x=109$ & $71°$

**Parallel Lines:**

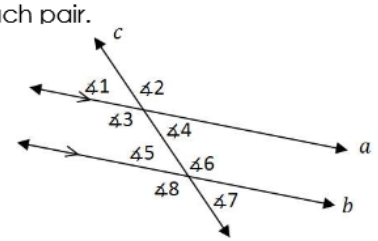
10) Name the angles listed and the special property of each pair.

a) ∠1 and ∠5 Corresp. ≅

b) ∠4 and ∠6 Same Side Int, 180°

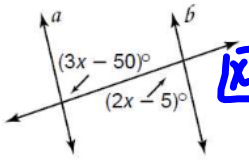
c) ∠2 and ∠8 Alt. Ext ≅

d) ∠4 and ∠5 Alt. Int. ≅




11) Solve for x.

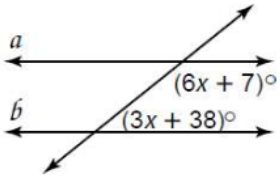
a)




$3x-50=2x-5$

$x=45$

b)




$6x+7+3x+38=180$

$9x+45=180$

$9x=135$

$x=15$

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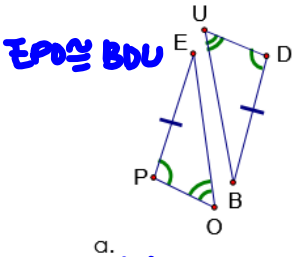
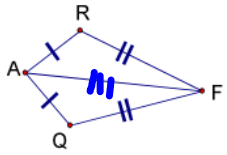
12) **Congruent Triangles:**
**State whether each pair of triangles is congruent by *SSS, SAS, ASA, AAS, or HL*; if none of these methods work, write "none". If congruent, make a congruence statement for the triangles.**



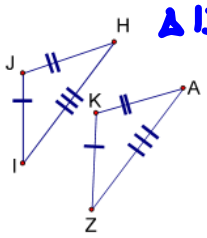

a. EPO ≅ BDU

AAS



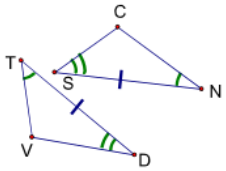

b. SSS

ΔAR ≅ ΔAQ



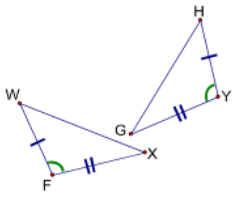

c. ΔIJH ≅ ΔKA

SSS

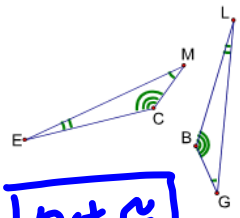



d.

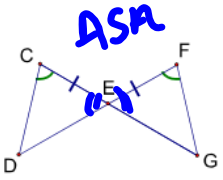
ASA TVD ≅ NCS




e. SAS WFX ≅ HYG

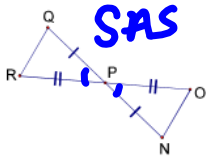



f. not ≅



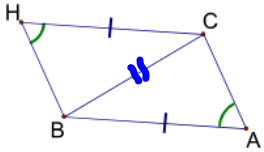

g. ASA

CED ≅ FEG




h. SAS

RPQ ≅ OPN




i. not ≅

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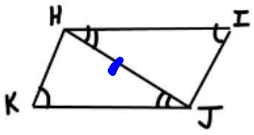
Geometry 1- Angles, Triangles, Transformations Review

13) Complete the following proof:

Given: $\angle I \cong \angle K$ ; $\angle IHJ \cong \angle KJH$
Prove: $\Delta HJK \cong \Delta JHI$



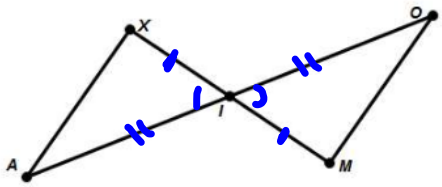

| Statement | Reason |
|---|---|
| 1. $\angle I \cong \angle K$ | 1. Given |
| 2. $\angle IHJ \cong \angle KJH$ | 2. Given |
| 3. HJ ≅ HJ | 3. Reflexive |
| 4. $\Delta HJK \cong \Delta JHI$ | 4. AAS |

**Fill in the missing statements or reasons:**

14) Given: Point I is the midpoint of $\overline{XM}$

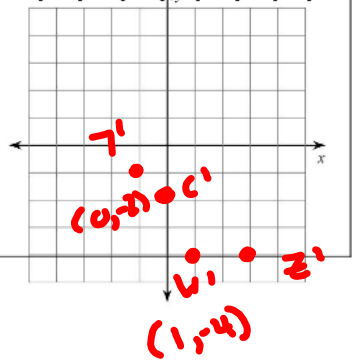
Point I is the midpoint of $\overline{AO}$

*Prove*: ΔAXI ≅ ΔOMI



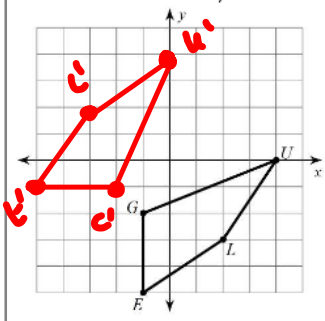
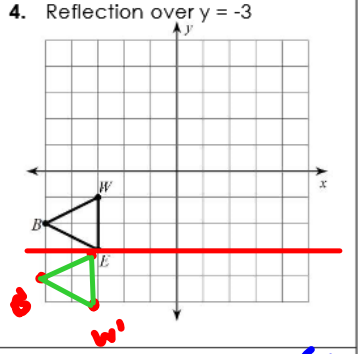
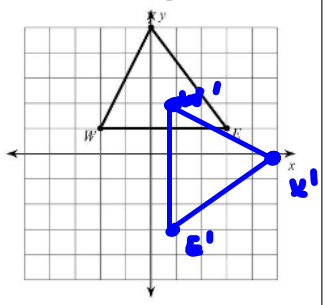
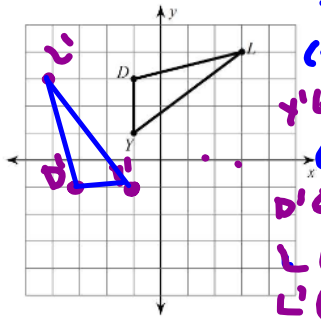

| Statements | Reasons |
|---|---|
| 1. I is the midpoint of $\overline{XM}$ | Given |
| 2. $\overline{XI} \cong \overline{MI}$ | Definition of Midpoint |
| 3. I is the midpoint of $\overline{AO}$ | Given |
| 4. $\overline{AI} \cong \overline{OI}$ | Defn. Midpt |
| 5. $\angle AIX \cong \angle OIM$ | Vertical ∠s ≅ |
| 6. $\Delta AXI \cong \Delta OMI$ | SAS |

Transformations Section:

| What you need to know & be able to do | Things to remember | Problem | Problem |
|---|---|---|---|
| Translations | • Find the new coordinates by adding/ subtracting the given value.<br>• Find the pre-image by doing the OPPOSITE. | **1.** Translate the following points by the rule: $(x,y) \rightarrow (x+1, y-4)$<br>S (-5, 2)→ (-4, -2)<br>Y (-4, 5)→ (-3, 1)<br>R (-1, 1)→ (0, -3)<br>A (-4, -2)→ (-3, -6) | **2.** Translation: (x, y) → (x – 2, y – 6)<br>(1,-3) (4,-3) (3,-1)<br>W(3, 2) C(2, 4) T(3, 5) Z(5,2)<br>  <br>(1,-4) |

# Unit 1 Review Guide Key

Geometry 1- Angles, Triangles, Transformations Review

| | | | |
|---|---|---|---|
| Reflections | • Over x-axis: (x, -y)<br>• Over y-axis: (-x, y)<br>• Over y = x: (y, x)<br>• Over y = -x: (-y, -x)<br>• Reflection over any other line: PROTECT THE DISTANCE | **3.** Reflection over y = x  | **4.** Reflection over y = -3  |
| Rotations<br>(0,5) → (5,0)<br>(-2,1) → (1,2) | • 90CW/270CCW: (y, -x)<br>• 180: (-x, -y)<br>• 90CCW/270CW: (-y, x)<br>90CW (y,-x)<br>(3,1) → (1,-3) | **5.** Rotate the figure 90° CW  | **6.** Rotate the figure 90° CCW (-y,x)<br>(-1,1)<br>y'(4,-1)<br>(-1,3)<br>D'(3,-1)<br>L (3,4)<br>L'(-4,3)  |
| Combinations of Transformations | • Glide Reflection: Translation and Reflection<br>• Rotation and Reflection<br>• ORDER IS IMPORTANT<br>• Use the *previous* ordered pairs to do the next transformation. | **7.** Given the points<br>**M (-3, 1) S (5, -2)**<br>Translate: (x – 3, y + 2)<br>Reflect: y = -x<br>M' → (-6,3) M'' → (-3,6)<br>S' → (2,0) S'' → (0,-2) | **8.** Given the points<br>**K (0, -4) P (-6, -3) R (1, 2)**<br>Reflect: over the x-axis<br>Rotate: 270 CCW (y,-x)<br>K' → (0,4) K'' → (4,0)<br>P' → (-6,3) P'' → (3,6)<br>R' → (1,-2) R'' → (-2,-1) |