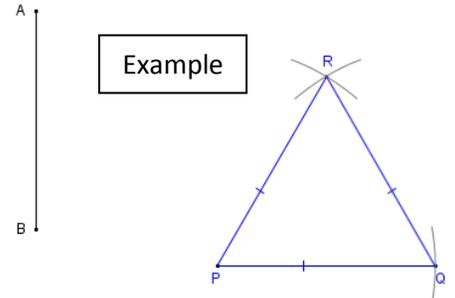


4-16L Constructions Notes and Problem Set

Use your compass and straightedge to construct each of the following. You may use your universal angle maker to check the accuracy of your constructions.

1. Construct equilateral $\triangle TRY$ using the given side length:

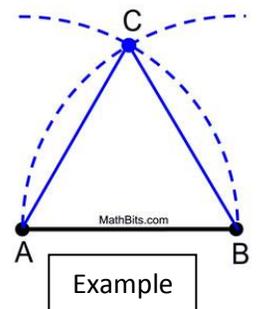
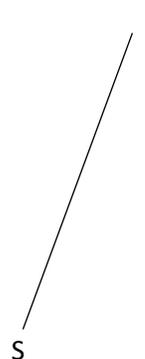
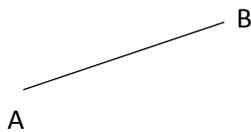


Was your construction accurate? _____ How do you know? _____

2. Construct an isosceles triangle whose base angles measure 30° on the given base \overline{HA} .



3. Construct isosceles triangle ISO on the given base \overline{IS} whose legs are congruent to \overline{AB}



4. Construct right triangle RGT whose right angle vertex is R. What is the base skill you need? _____

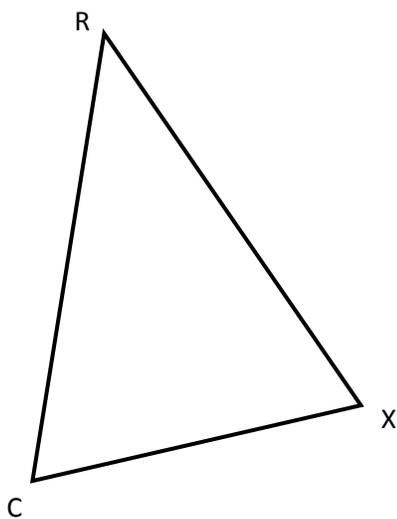


Compare with your neighbor's. Are they congruent? _____

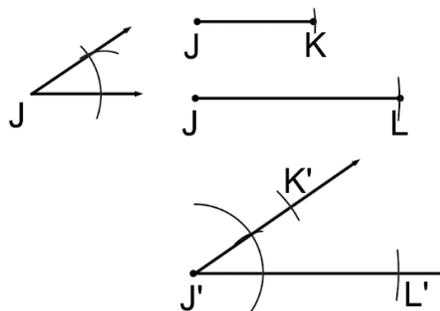
What other information would you need in order to guarantee the triangles are congruent by:

- SAS \cong _____
- RHL \cong _____
- ASA \cong _____

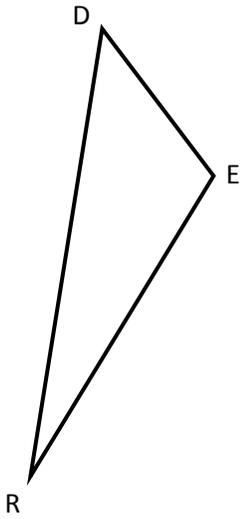
5. Construct triangle MTH congruent to triangle RCX using the congruency criteria SAS.



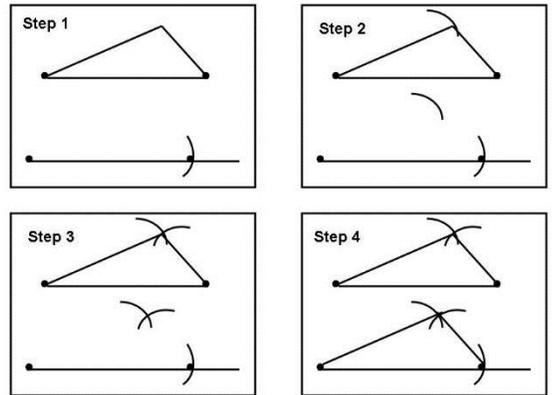
1. Copy angle - draw long side rays
2. Copy one segment to determine length of side from angle vertex
3. Repeat with other segment from angle vertex



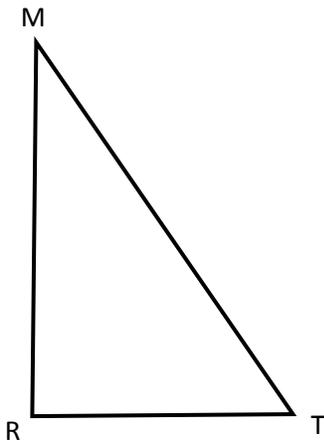
6. Construct triangle BLU which is congruent to triangle RED using the congruency criteria SSS.



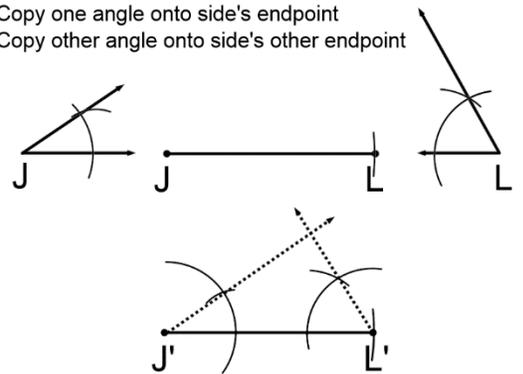
Example: Copy each side



7. Construct triangle GEO congruent to triangle MTR using the congruency criteria ASA.



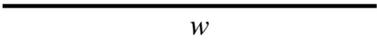
1. Copy side (segment)
2. Copy one angle onto side's endpoint
3. Copy other angle onto side's other endpoint



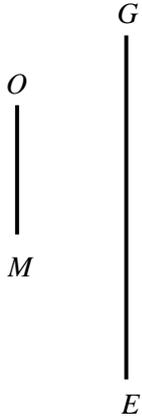
8. Which congruency criteria was personally easiest for you?

PROBLEM SET 4-16L

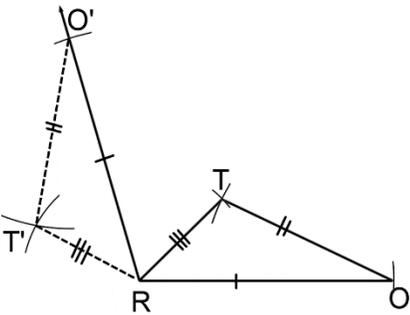
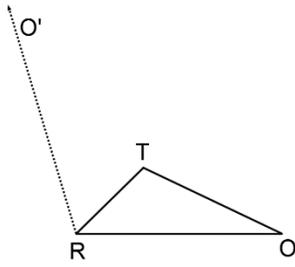
1. Construct equilateral triangle YOU with a side length equal to w .



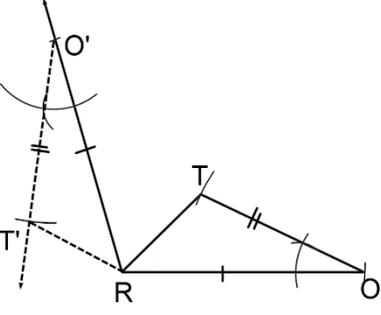
2. Construct isosceles triangle LUV with legs congruent to \overline{GE} and a base congruent to \overline{OM} .



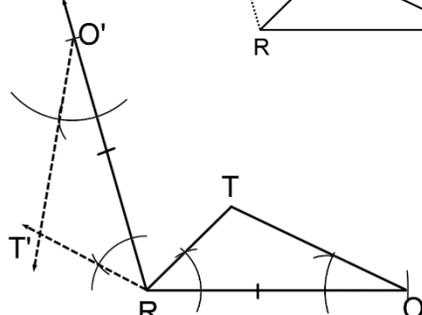
3. I completed the rotation in which \overline{RO} had already been rotated around R by the measure of $\angle ORO'$ to $\overline{RO'}$ such that ΔROT maps to $\Delta RO'T'$. Which congruency criteria did I use each time?



A) _____



B) _____



C) _____

I was able to copy a segment (\rightarrow congruent side) or an angle (\rightarrow congruent angle) because rotations preserve _____ and _____.

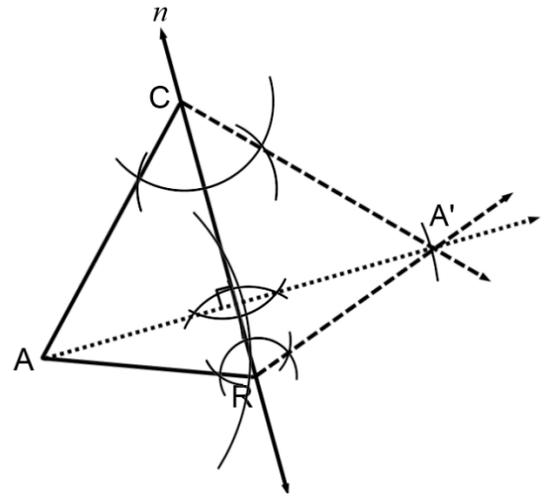
4. I reflected $\triangle CAR$ into line n by constructing the congruent image $\triangle CA'R$.

a. Why didn't I have to measure CR to find C' and R'?

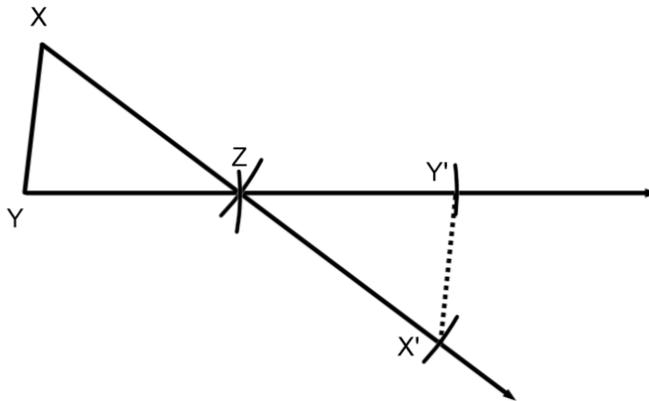
b. I used the triangle congruency criteria _____.

c. Which other criteria could I have used? _____

d. Compare my results with my construction of the reflection of A. Did A map onto the same A'? _____



5. I constructed the image of $\triangle XYZ$ by reflecting $\triangle XYZ$ into point Z.

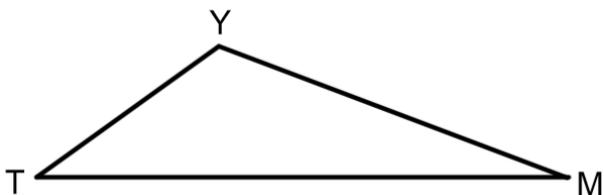


a. We know that reflections into a point preserve _____ and _____ so $\triangle XYZ \cong \triangle X'Y'Z$.

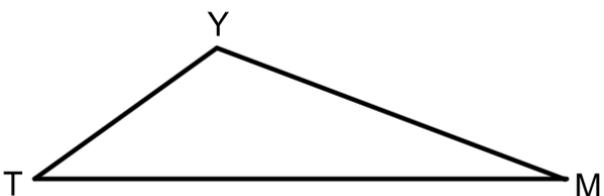
b. What triangle congruency criteria did I satisfy with my construction? _____

6. Construct and label the image of $\triangle MYT$ three times, using a different criteria each time.

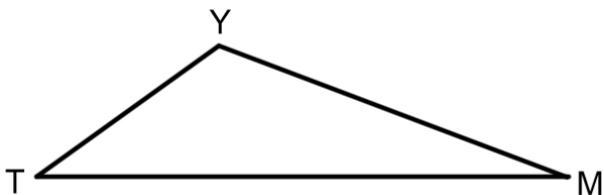
Criteria: $SSS \cong SSS$



Criteria: $SAS \cong SAS$



Criteria: $ASA \cong SASA$



Extra Credit: Construct an isosceles right triangle using only angle measures.