☐ **DO NOW – Geometry Regents Lomac 2014-2015 Date ____. due ____.** **Scale drawings Ratio Method** **5.2L**

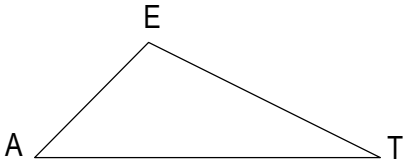
(DN) Draw $\overline{OR}$ on your Do Now sheet. Use your compass and straightedge to make a segment half the length of $\overline{OR}$. (Hint: the segment you make can be part of the original segment OR.)

Name _____ **Per**_____

LO: I can make a scale drawing by construction, the ratio method, or the parallel method. (using dilation)

☐ (1) compass, straightedge **Scale drawing with the construction method**

☐ (a) Use a compass and straightedge to construct a scale drawing of △EAT using a scale factor r = 4. Label the image EA'T'. (Which point isn't going to move?) Write the steps you take on the lines below.



Step 1:_____

_____

Step 2:_____

_____

Step 3:_____

_____

Step 4:_____

_____

Step 5:_____

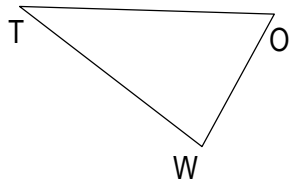
_____

Verify that you have made a scale drawing by comparing side ratios and angle measures.
(ratios of corresponding sides should be equal and angle measures should be equal)

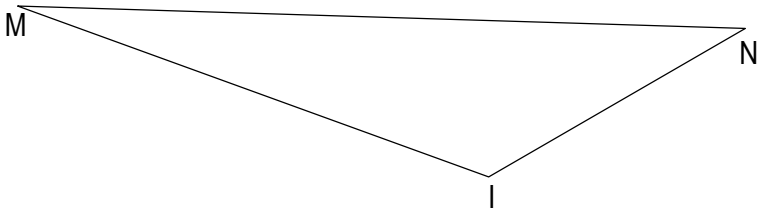
☐ (2) **Scale drawing with the construction method**

compass, straightedge

☐ (a) Use a compass and straightedge to construct a scale drawing of △TWO using a scale factor r = 5. Label the image TW'O'. (Which point isn't going to move?)



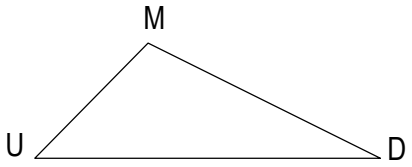
☐ (b) Use a compass and straightedge to construct a scale drawing of △MIN using a scale factor r = 2. Label the image M'IN'. (Which point isn't going to move?)



☐ (3) **Scale drawing with the ratio method**

ruler

☐ (a) Use a ruler to construct a scale drawing of △ MUD using a scale factor r = 4. Label the image MU'D'. (Which point isn't going to move?) Write the steps you take on the lines below.



Step 1:_____

_____

Step 2:_____

_____

Step 3:_____

_____

Step 4:_____

_____

Step 5:_____

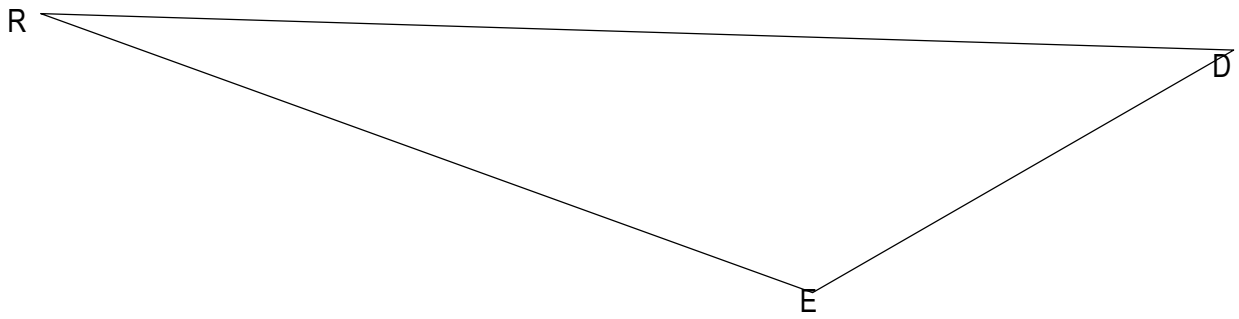
_____

Verify that you have made a scale drawing by comparing side ratios and angle measures.
(ratios of corresponding sides should be equal and angle measures should be equal)

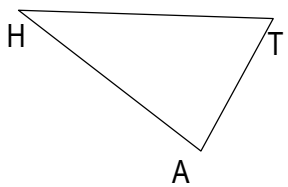
☐ (4) **Scale drawing with the ratio method**

ruler

☐ (a) Use the ratio method to make a scale drawing of △RED using a scale factor $r = \frac{1}{2}$. Label the image R'E'D. (Which point isn't going to move?)

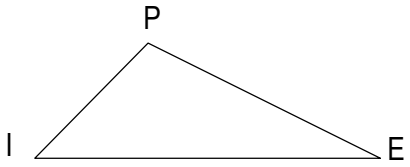


☐ (b) Use the ratio method to make a scale drawing of △HAT using a scale factor $r = \frac{9}{2}$. Label the image H'AT'. (Which point isn't going to move?)



☐ (5) ruler and setsquare **Scale drawing with the parallel method**

☐ (a) Use a ruler and setsquare to make a scale drawing of △PIE using a scale factor r = 4. Label the image PI'E'. (Which point isn't going to move?) Write the steps you take on the lines below.



Step 1:_____

_____

Step 2:_____

_____

Step 3:_____

_____

Step 4:_____

_____

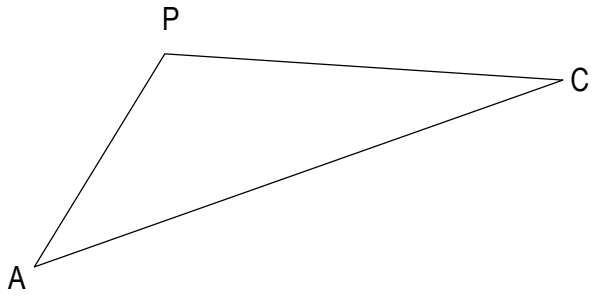
Step 5:_____

_____

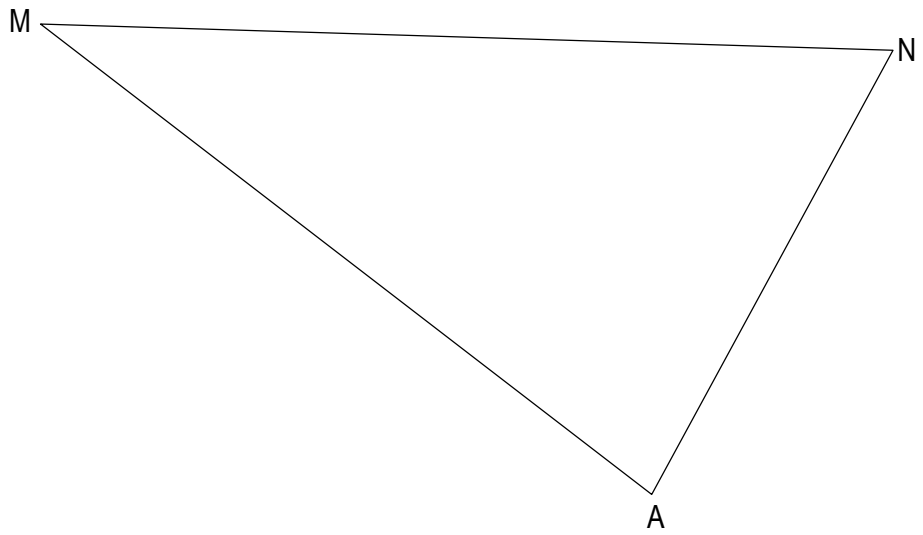
Verify that you have made a scale drawing by comparing side ratios and angle measures.
(ratios of corresponding sides should be equal and angle measures should be equal)

☐ (6) ruler and setsquare **Scale drawing with the parallel method**

☐ (a) Use the parallel method to make a scale drawing of △PAC using a scale factor $r = \frac{5}{2}$. Label the image P'AC'. (Which point isn't going to move?)



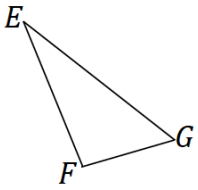
☐ (b) Use the parallel method to make a scale drawing of △MAN using a scale factor $r = \frac{3}{4}$. Label the image M'AN'. (Which point isn't going to move?)

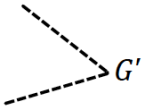


☐ (7) compass, ruler and setsquare **Constructing scale drawings given an angle or segment of the scaled figure.**

☐ (a) Triangle EFG is provided below, and one angle of scale drawing △E'F'G' is also provided. Use compass and straightedge construction, the ratio method, or the parallel method to complete the scale drawing so that the scale factor is r = 3. What properties do the scale drawing and the original figure share? Explain how you know.

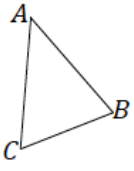
Describe your steps _____





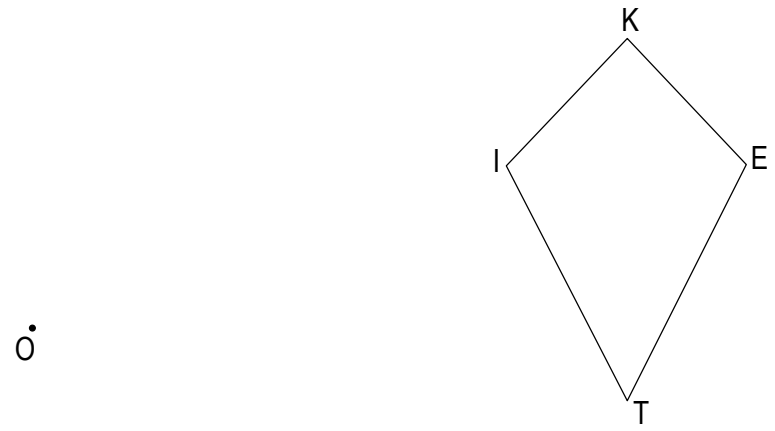
☐ (b) Triangle ABC is provided below, and one side of scale drawing △A'B'C' is also provided. Use construction tools to complete the scale drawing and determine the scale factor.

Describe your steps _____



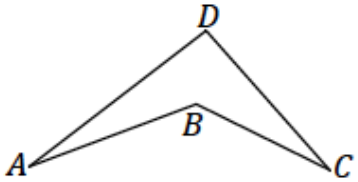
☐ (8) **Using dilation to make scale drawings from centers that are not a vertex of the shape**
ruler

☐ (a) Example: Create a scale drawing of the figure below using the ratio method about center O and scale factor r = ½. (notation: $D_{O,½}$)



STEPS:
(1) Draw rays _____, _____, _____, _____
(2) Use a ruler to find the distance OK = _____ and then multiply OK by ____ to get OK' = _____
(3) Repeat step 2 for OI, OT, and OE
(4) Label and connect K'I'T'E'

☐ (b) Create a scale drawing of the figure below using the ratio method about center O and scale factor r = 3. (notation: $D_{O,3}$)
STEPS (1) Draw _____
(2) Measure _____ and multiply by _____ to locate _____
(3) Repeat, label, connect

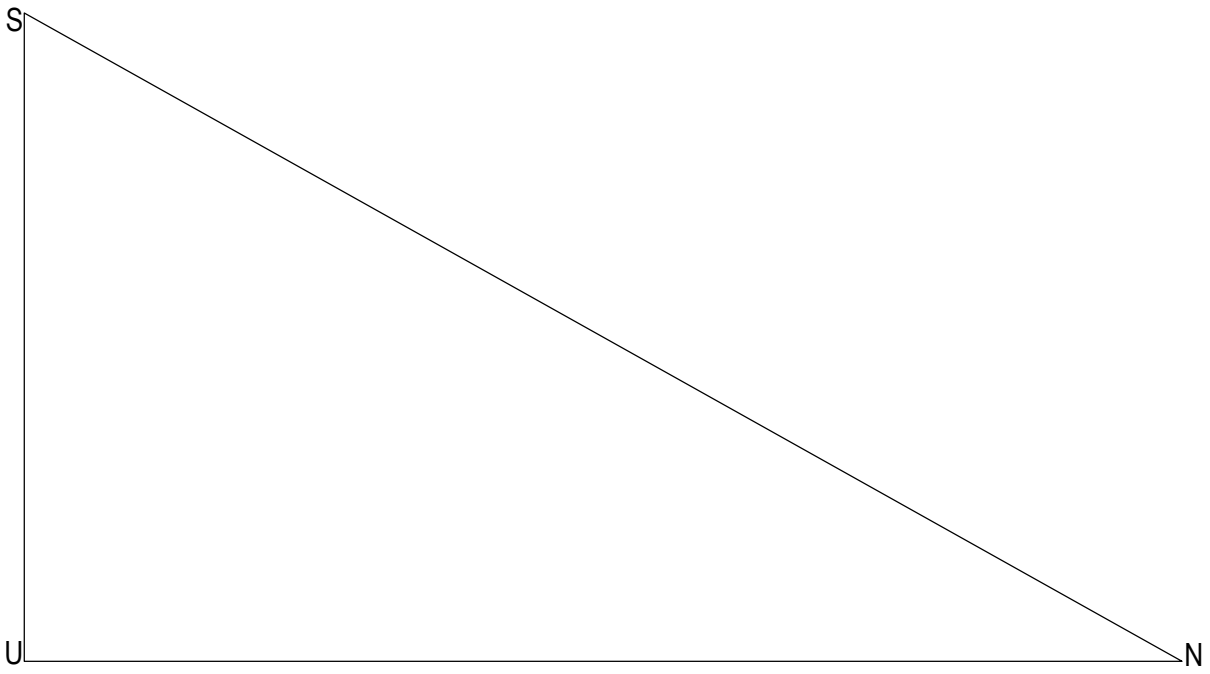


O

☐ (9) **Scale drawing with the ratio method**

compass, straightedge

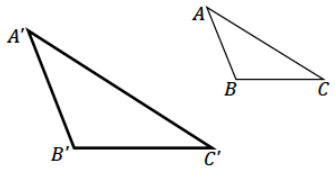
☐ (a) Construct a scale drawing of △SUN using a scale factor r = ¼.



☐ (10) **Using dilation to make scale drawings**

ruler

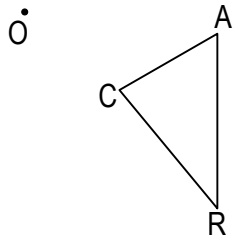
☐ (c) △A'B'C' is a scale drawing of △ABC drawn by using the ratio method. Use your ruler to determine the location of the center O used for the scale drawing.



☐ (11) **Exit Ticket**

compass, straightedge

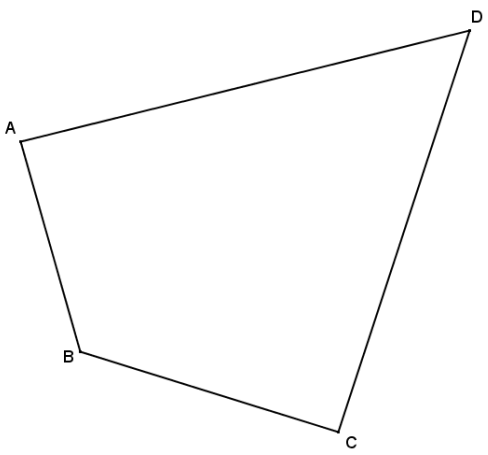
(1) Trace the figure (including point O) onto your Exit Ticket page
(2) Use the ratio method to create a scale drawing about center Q and scale factor r = 2
(3) Summarize the steps for making a scale drawing by the ratio method.



☐ (12) **Homework**

compass, straightedge

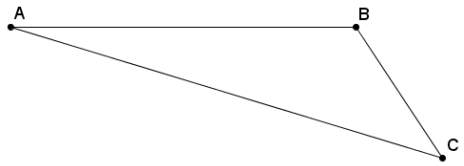
☐ (a) Use the ratio method to create a scale drawing about center O with a scale factor of r = ¼. Use tracing paper to verify that the corresponding angles are equal. (notation: $D_{O,¼}$)



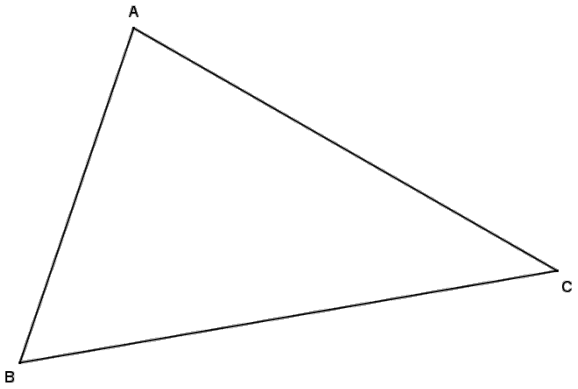
☐ (12) **Homework**

compass, straightedge

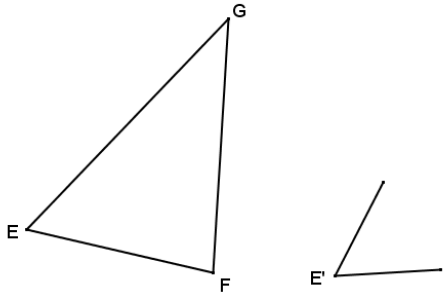
☐ (c) Use construction tools to create a scale drawing of △ABC with a scale factor of r = 3.



☐ (d) Use construction tools to create a scale drawing of △ABC with a scale factor of r = ½.

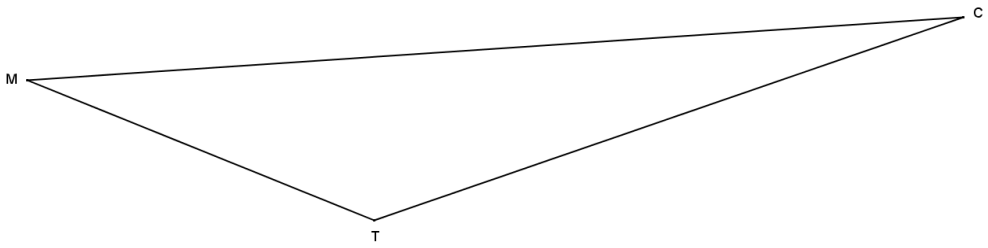


☐ (e) △EFG is provided below, and one angle of scale drawing △E'F'G' is also provided. Use construction tools to complete a scale drawing so that the scale factor is r = 2.

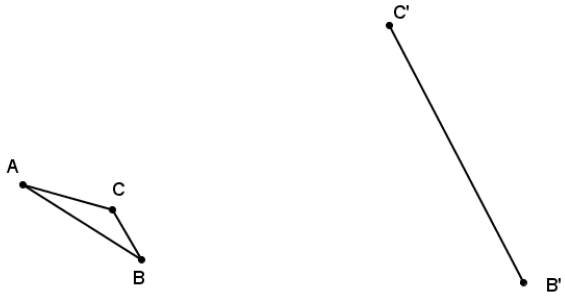


☐ (12) **Homework**
cont.

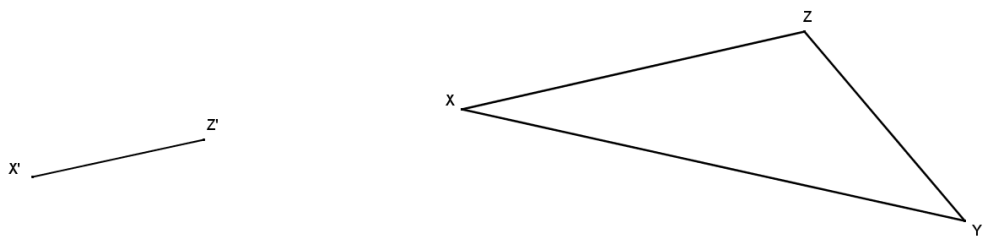
☐ (f) Triangle MTC is provided below, and one angle of scale drawing $\triangle M'T'C'$ is also provided. Use construction tools to complete a scale drawing so that the scale factor is ¼.



☐ (g) Triangle ABC is provided below, and one side of scale drawing $\triangle A'B'C'$ is also provided. Use construction tools to complete the scale drawing and determine the scale factor.



☐ (h) Triangle XYZ is provided below, and one side of scale drawing $\triangle X'Y'Z'$ is also provided. Use construction tools to complete the scale drawing and determine the scale factor.



☐ (12) cont. **Homework**

☐ (i) Quadrilateral $GHIJ$ is a scale drawing of quadrilateral $ABCD$ with scale factor r. Describe each of the following statements as always true, sometimes true, or never true, and justify your answer.

a. $AB=GH$

b. $m\angle ABC=m\angle GHI$

c. $ABGH=BCHI$

d. Perimeter$GHIJ=r\cdot$Perimeter($ABCD$)

e. Area$GHIJ=r\cdot$Area$ABCD$ where $r\neq 1$

f. $r<0$

☐ (j) Quadrilateral A"B"C"D" is one of a sequence of three scale drawings of quadrilateral ABCD that were all constructed using the ratio method from center O. Find the center O, each scale drawing in the sequence, and the scale factor for each scale drawing. The other scale drawings are quadrilaterals A'B'C'D' and A"B"C"D".