(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.)
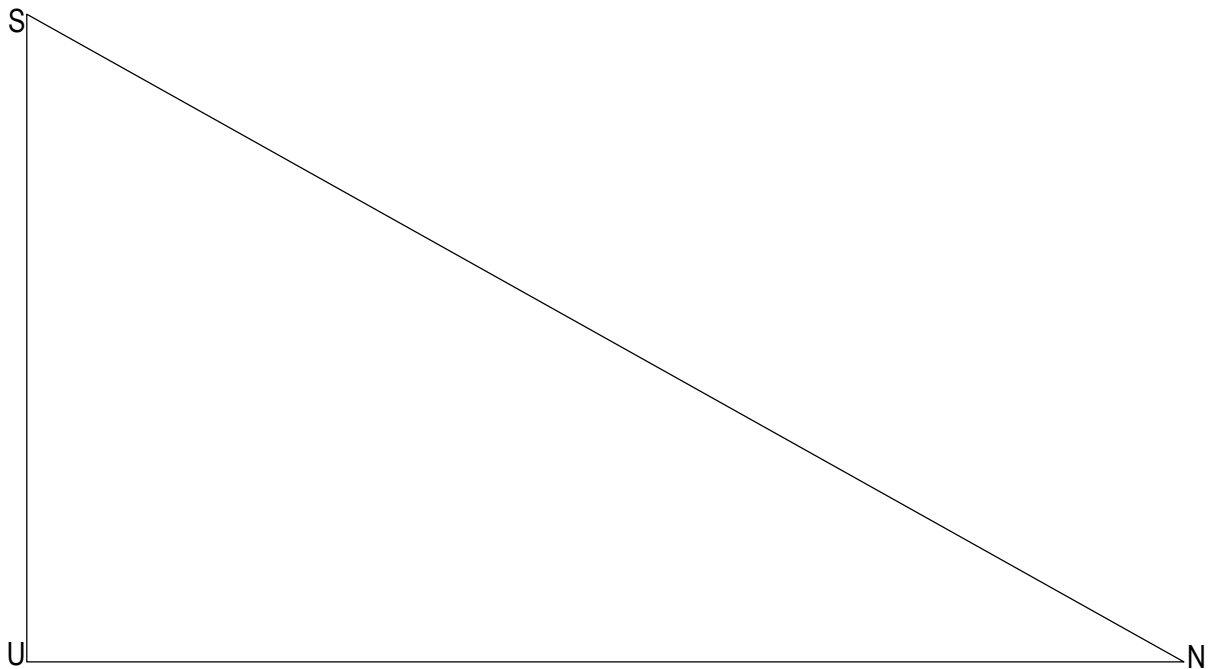
Name _____**Per**_____

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

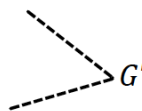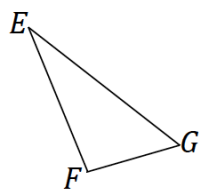☐ (1) **Scale drawing construction**

compass, straightedge

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

☐ (2)   **Constructing scale drawings given an angle or segment of the scaled figure.**

compass, straightedge

☐ (a) Triangle EFG is provided below, and one angle of scale drawing △E'F'G' is also provided. Use construction tools 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.
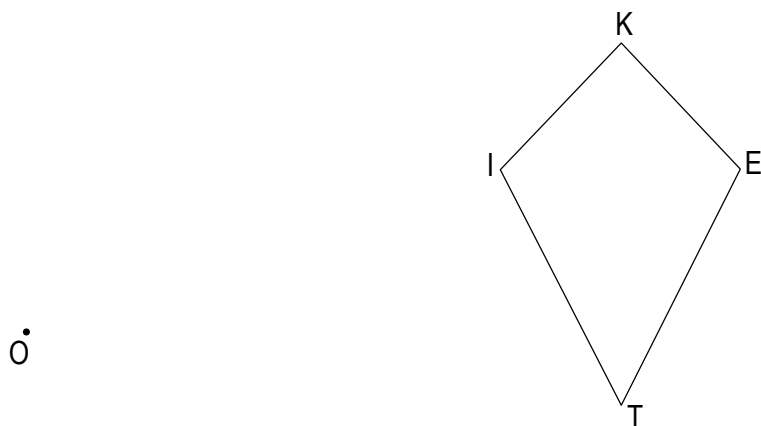
☐ (b) Triangle ABC is provided below, and one side of scale drawing △A'B'C' is also provided. Use construction tools to complete the scale drawing and determine the scale factor.
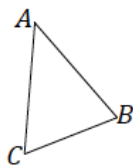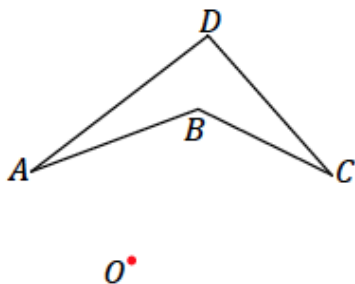
☐ **(3)**   **Using dilation to make scale drawings**
ruler

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

K

I   E

⚫
O

T

STEPS:
   (1) Draw rays _____, _____, _____, _____
   (2) Use a ruler to find the _____ between _____ and each vertex of KITE to dilate KITE.
   Why are we finding the midpoint? _____
   (3) 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: $D_{O,3}$)

D

B

A   C

O⚫

☐ **(3)** **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.
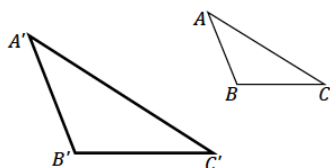

☐ **(4)** **Exit Ticket**
compass, straightedge

(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.
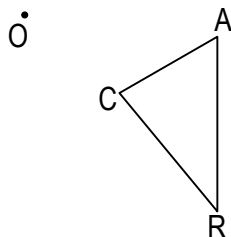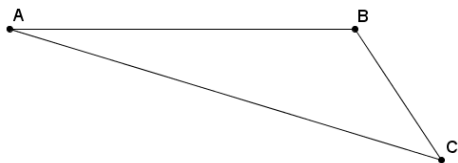

☐ **(5)** **Homework**
compass, straightedge

☐ (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: $D_{O,¼}$)
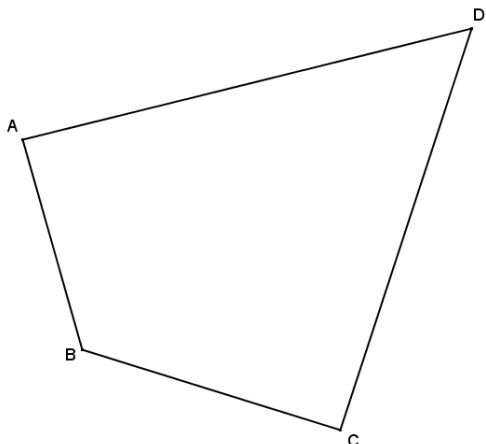
☐ (5) **Homework**

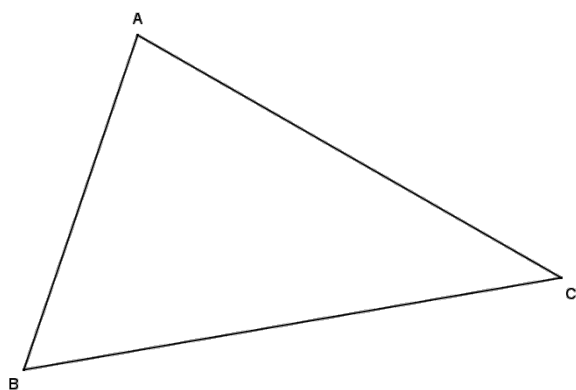compass,
straightedg
e

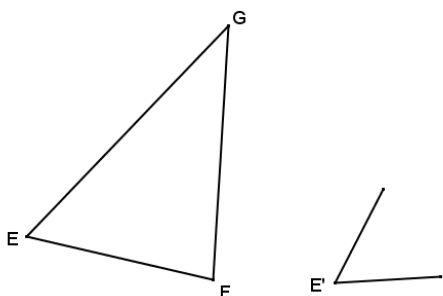☐ (c) Use construction tools to create a scale drawing of △ABC with a scale factor of r = 3.

A ⋅   ⋅ B

          ⋅ C

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

A

                              C

  B

☐ (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.
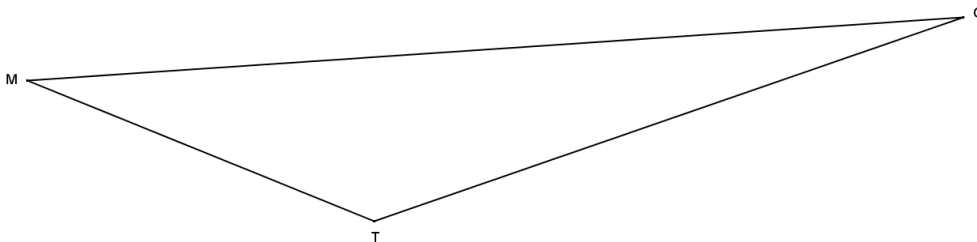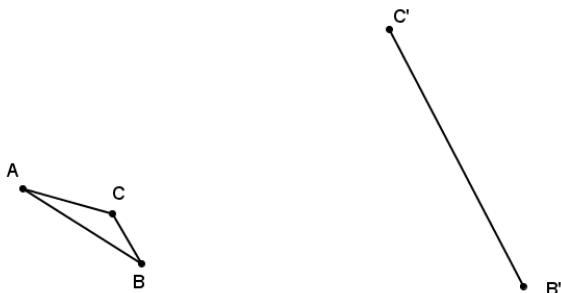

G

E

      F   E'

☐ (5) **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.

M

C

T

☐ (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.

C'

A

C

B

B'

☐ (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.

Z

X

Z'

X'

Y
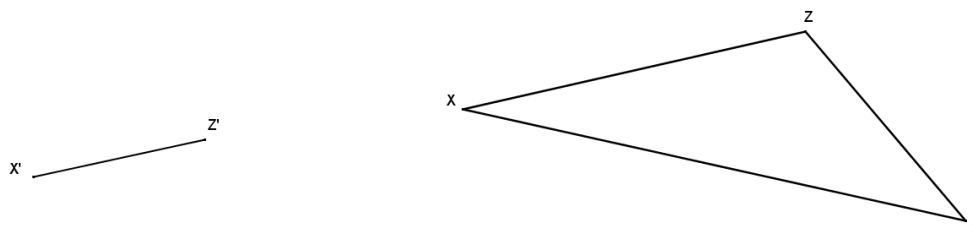
☐ (5)   **Homework**

cont.

☐ (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·Perimeter($ABCD$)

   e.   Area$GHIJ$=r·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".