(DN) Describe how to make a scale drawing using the ratio method (from lesson 5.2 #3)

Name _____**Per**_____

LO: I can use the parallel method to create scale drawings and can verify that a drawing is to scale by showing that lengths are proportional and angles are congruent.

☐ **(1)   The ratio method**

Read the lesson summary below and add anything you missed to your Do Now description of the ratio method.

Lesson Summary

1. To create a scale drawing using the ratio method, each vertex of the original figure is dilated about the center O by scale factor r. Once all the vertices are dilated, they are joined to each other in the same way as in the original figure.

2. The scale factor tells us whether the scale drawing is being enlarged ($r > 1$) or reduced ($0 < r < 1$).

☐ **(2)   The parallel method**
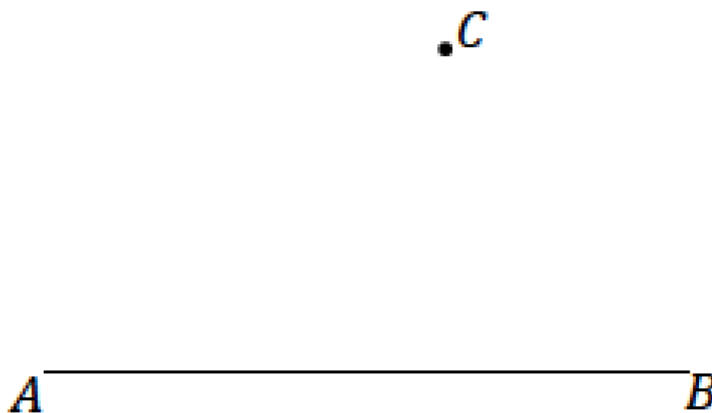
Karl dilated △ABC from center O, resulting in △A'B'C'. He says that he completed the drawing using parallel lines. How could he have done this? Explain

_____

_____

_____

_____

_____

_____
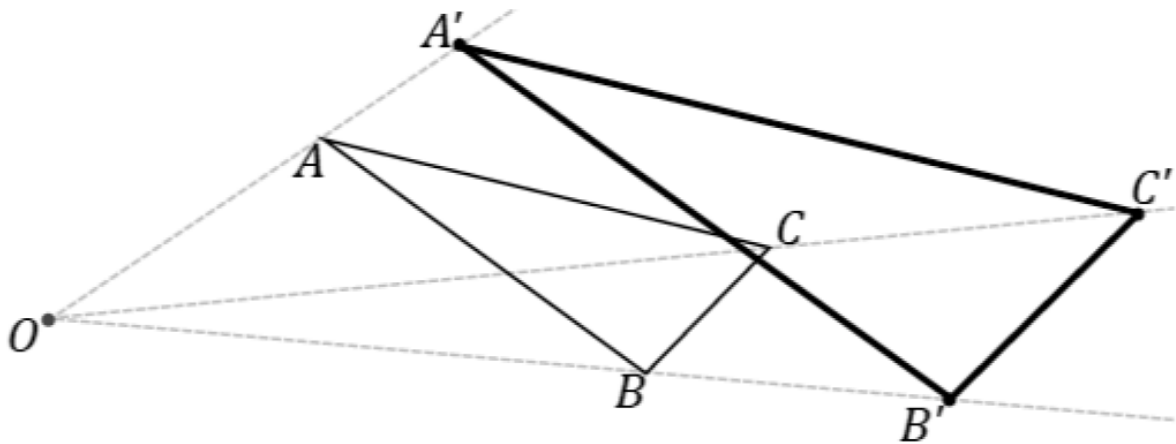
☐ (3) **Drawing parallel using a ruler and set square (or any square)**

compass, straightedge

☐ (a) Saun used a ruler (the rectangle) and a setsquare (the triangle) to draw a line through C parallel to AB.

.C   .C

A   B   A   B   A   B
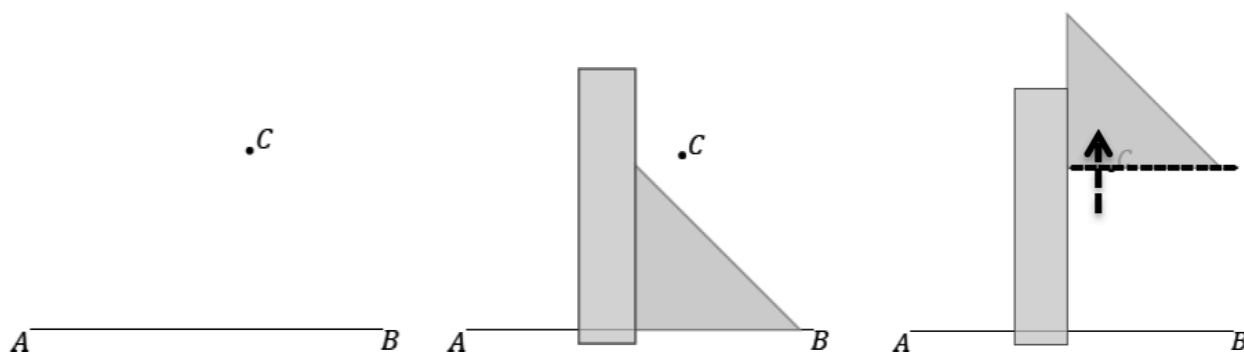
What ensures that the line Saun drew is parallel to AB?

_____

_____

_____

☐ (b) Arielle was drawing parallelogram ABCD when her work was interrupted. Use a ruler and setsquare to finish drawing the parallelogram that she started

.C

A   B

☐ (4) **Scale drawings using the parallel method**

Describe the steps needed to use the parallel method to make a scale drawing of the figure below with center O and scale factor r = 2. Perform one step at a time, describing each step as you complete it.

C

O•

A   B

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

☐ **(5)** **Scale drawings using the parallel method**

With a ruler and setsquare, use the parallel method to create a scale drawing of WXYZ by the parallel method. W' has already been located for you.
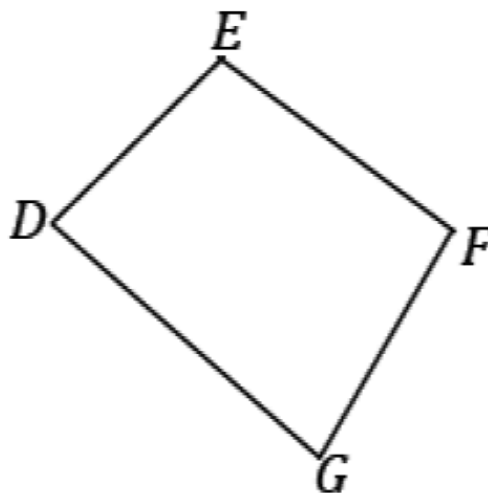
W'.

Z

W

Y

X

O°
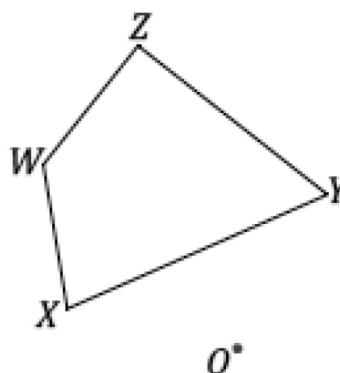
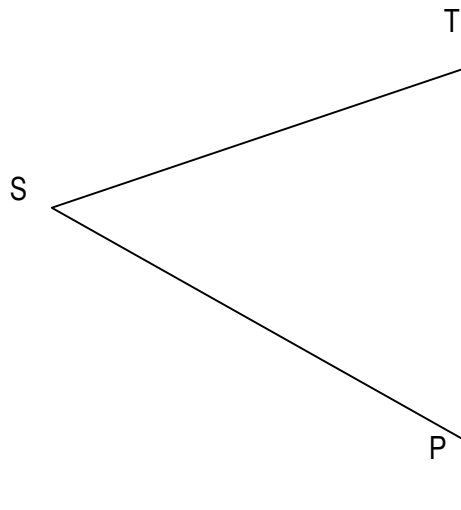Determine the scale factor of the scale drawing. _____

Verify that the resulting figure is in fact a scale drawing by showing that corresponding side lengths are in constant proportion and that corresponding angles are equal in measurement. (Describe or show on the diagram.)

☐ (6)   **Scale drawings using the parallel method**

With a ruler and setsquare, use the parallel method to create a scale drawing of DEFG with center O and scale factor r = ½ .

Verify that the resulting figure is in fact a scale drawing by showing that corresponding side lengths are in constant proportion and that corresponding angles are equal in measurement. (Describe or show on the diagram.)

☐ (7)   **Exit Ticket**

compass, straightedge

Trace point O and triangle STP onto your paper and use a ruler and straightedge to make a scale drawing of triangle STP with center O and scale factor r = ½ and label it S'T'P'. Verify that the resulting figure is in fact a scale drawing by showing that corresponding side lengths are in constant proportion and that corresponding angles are equal in measurement. (Describe or show on the diagram.)
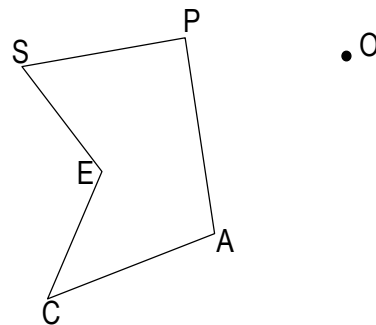
(1)

T

S

P

O•

☐ (8)   **Homework: FINISH CLASS WORK AND . . .**

compass, straightedge

☐ (1) Use the parallel method to create a scale drawing of SPACE with center O and scale factor r = 3 and label the drawing S'P'A'C'E'

P

S

•O

E

A

C

Verify that the resulting figure is in fact a scale drawing by showing that corresponding side lengths are in constant proportion and that corresponding angles are equal in measurement. (Describe or show on the diagram.)

☐ (8) **Homework**
cont.

☐ (2) Construct a copy of angle ABC and label it angle DEF. Construct the angle bisector of angle DEF.

A

B

C
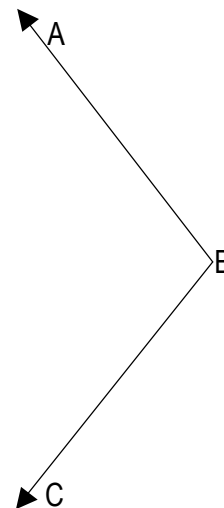
☐ (3) Robert says that ∠IDE and ∠EID are the base angles of an isosceles triangle. What is wrong with his statement?

T   I   R

D   E
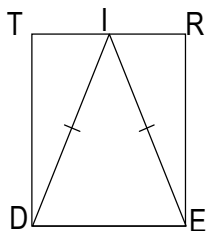
☐ (4) Write a proof.

given:
∠NIO ≅ ∠NGD

$\overline{NO} \cong \overline{ND}$

prove:
∠D ≅ ∠O

D

I

S

N   O
     G