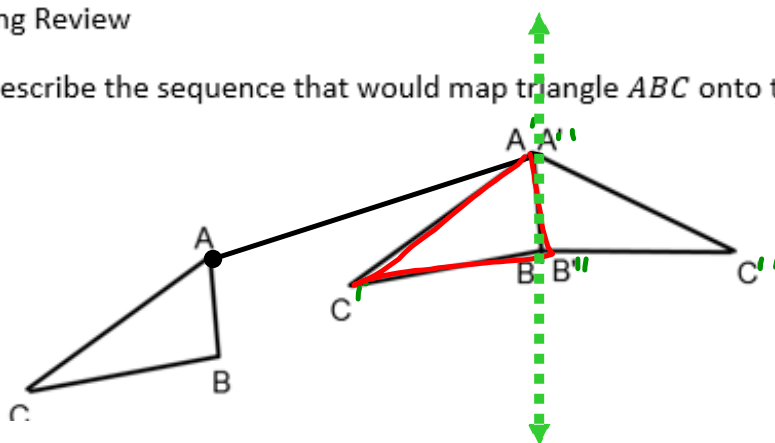


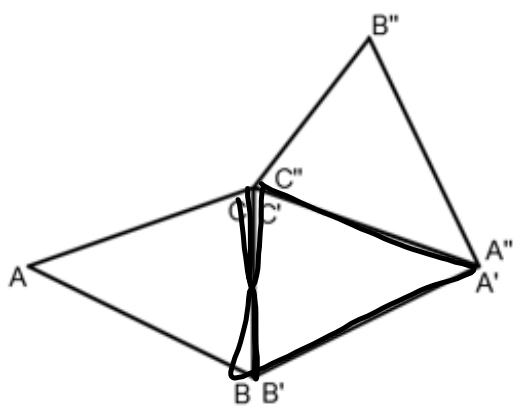
## Sequencing Review

1. Describe the sequence that would map triangle  $ABC$  onto triangle  $A''B''C''$ .



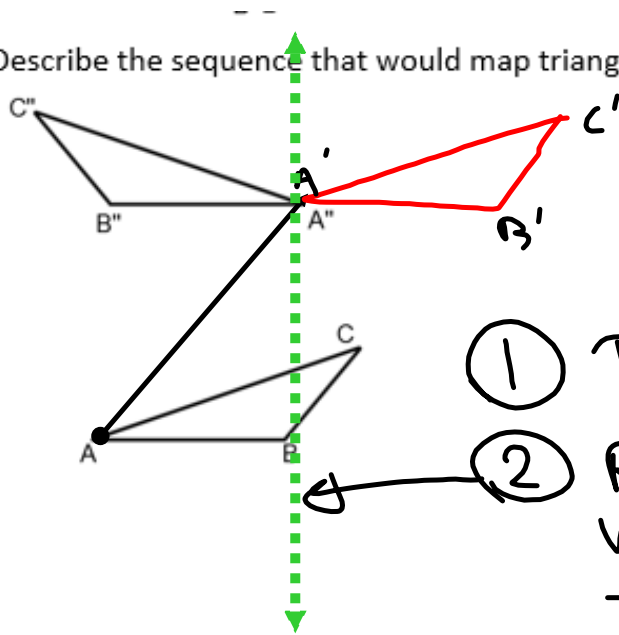
- ① Translate along  $\overrightarrow{AA'}$
- ② Reflect over  $\overline{A'B'}$

2. Describe the sequence that would map triangle  $ABC$  onto triangle  $A''B''C''$ .



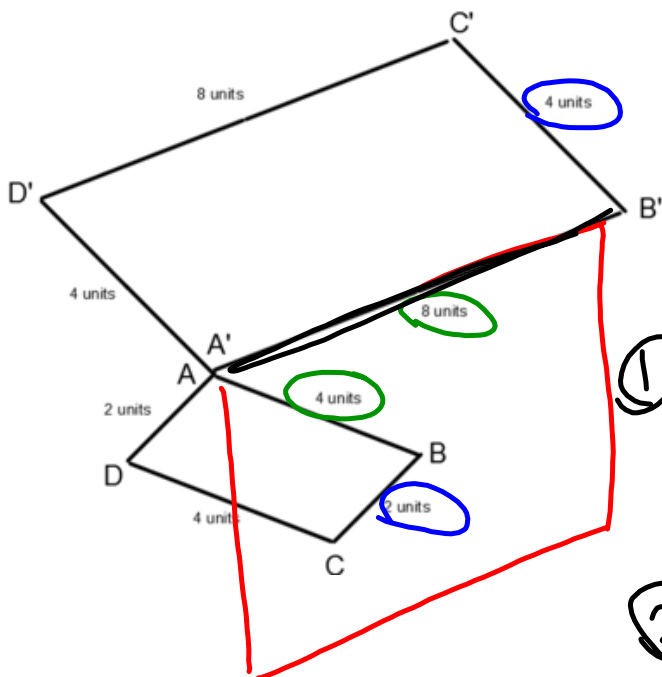
- ① Reflect over  $\overline{BC}$
- ② Reflect over  $\overline{A'C'}$

3. Describe the sequence that would map triangle  $ABC$  onto triangle  $A''B''C''$ .



- ① Translate along  $\vec{AA'}$
- ② Reflect over vertical line through  $A'$

4. Describe the sequence that would map quadrilateral  $ABCD$  onto quadrilateral  $A'B'C'D'$ .



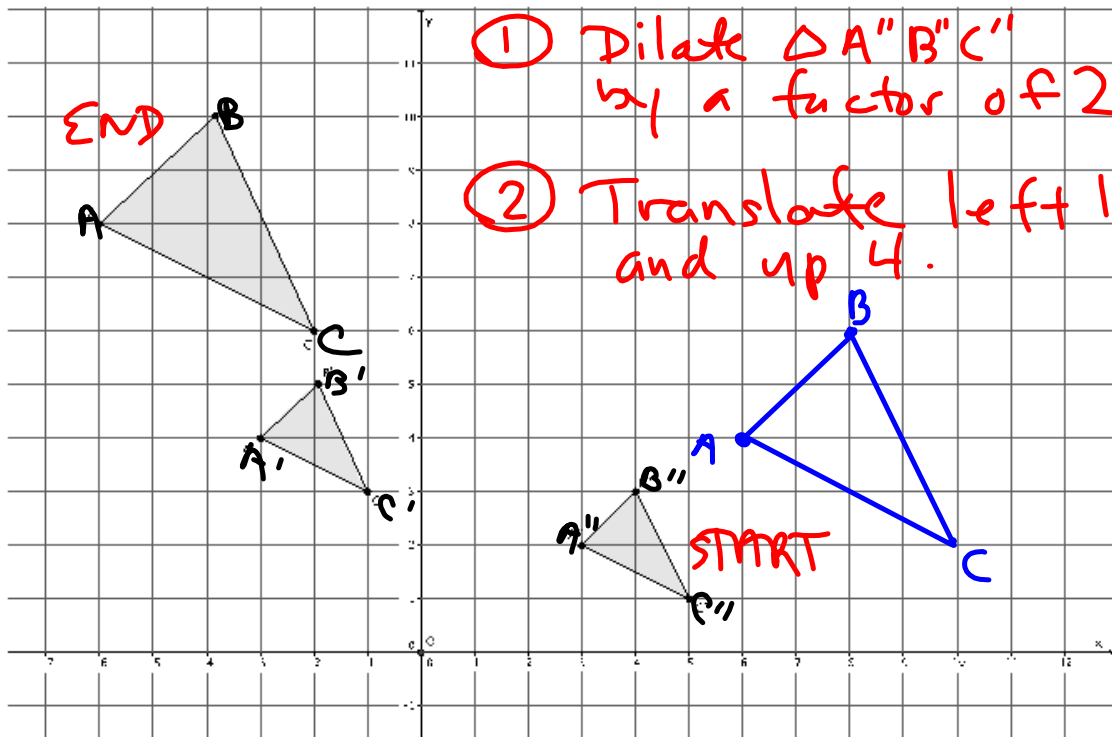
- ① Dilate from  $A$  by scale factor  $r=2$
- ② Rotate until  $AB$  aligns with  $A'B'$
- ③ Reflect ~~along~~ over  $A'B'$

## Lesson 8: Similarity

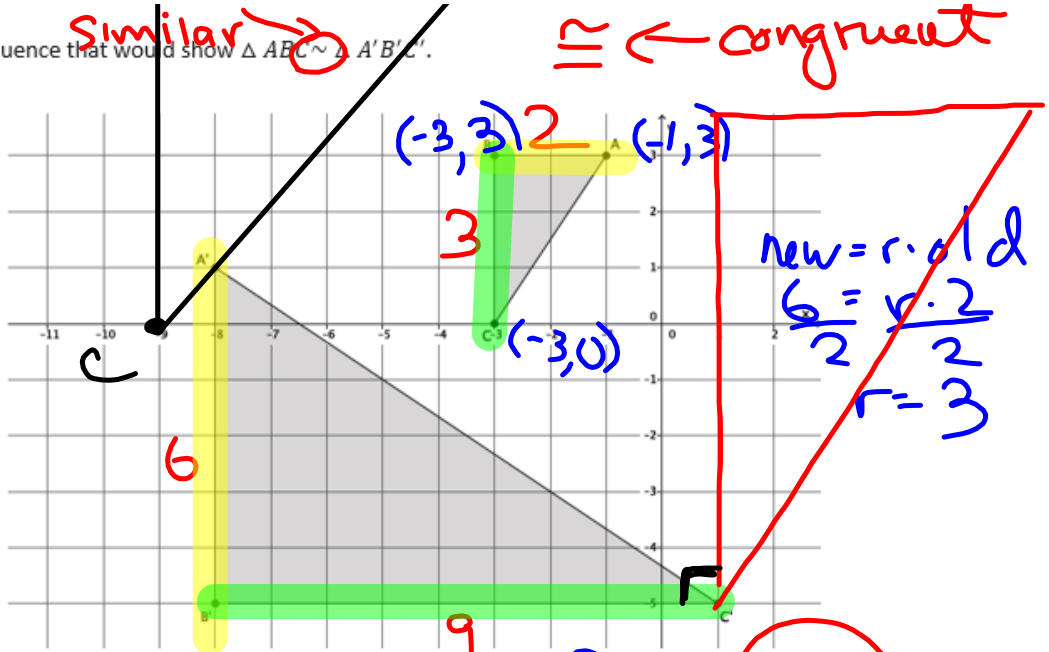
### Exercises 1-4

1. Triangle  $ABC$  was dilated from center  $O$  by scale factor  $r = \frac{1}{2}$ . The dilated triangle is noted by  $A'B'C'$ . Another triangle  $A''B''C''$  is congruent to triangle  $A'B'C'$  (i.e.,  $\triangle A''B''C'' \cong \triangle A'B'C'$ ). Describe a dilation followed by the basic rigid motion that would map triangle  $A''B''C''$  onto triangle  $ABC$ .

START END

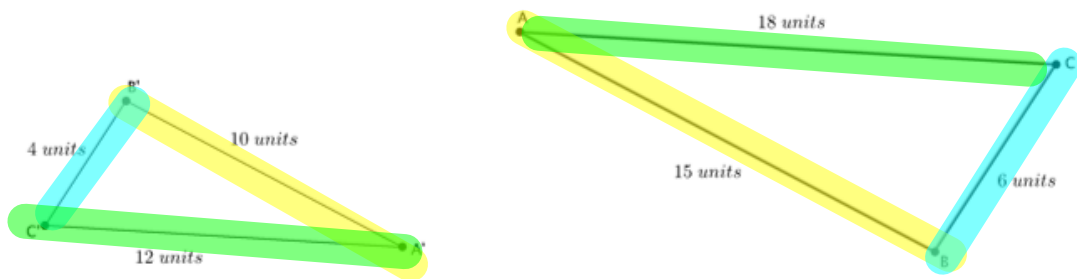


2. Describe a sequence that would show  $\triangle ABC \sim \triangle A'B'C'$ .



- ① Dilate by a scale factor  $r=3$
- ② Translate down 5 right 10
- ③ Rotate ccw  $90^\circ$  counterclockwise

3. Are the two triangles shown below similar? If so, describe a sequence that would prove  $\triangle ABC \sim \triangle A'B'C'$ . If not, state how you know they are not similar.



new =  $r \cdot \text{old}$   
 $\frac{10}{15} = \frac{r \cdot 15}{15}$   
 $r = .6$

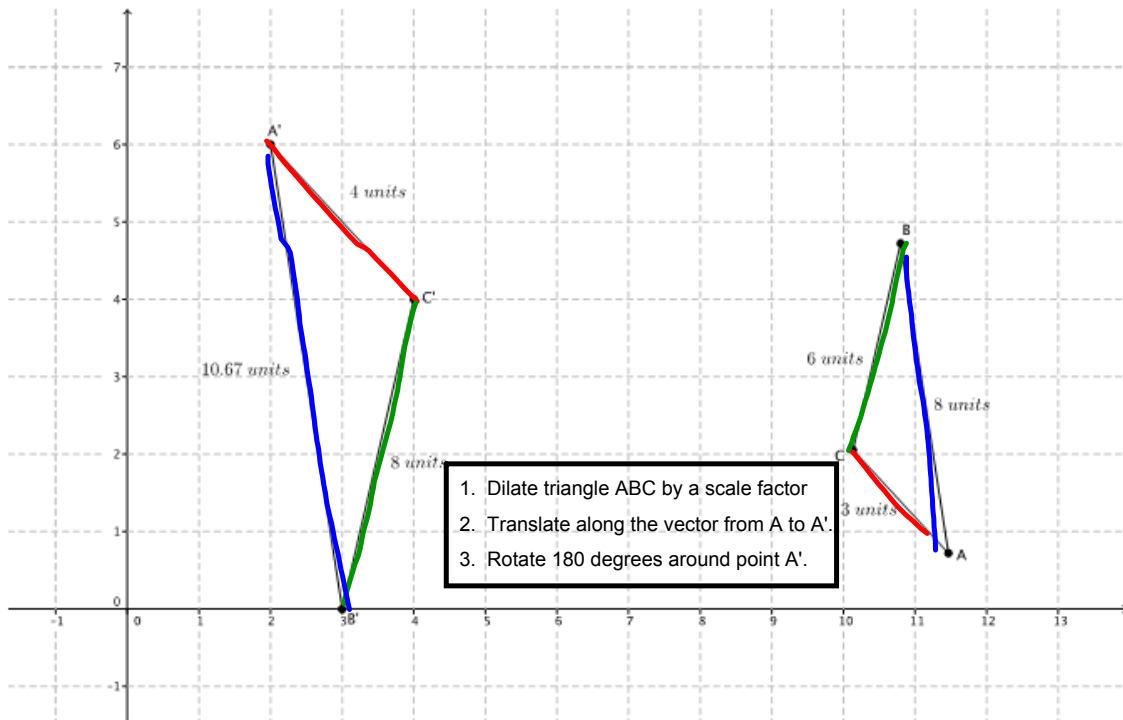
$\frac{4}{6} = \frac{r \cdot 6}{6}$   
 $r = .6$

$\frac{12}{18} = \frac{r \cdot 18}{18}$   
 $r = .6$

Sequence:

1. Dilate triangle ABC by a scale factor  $r = 0.6$
2. Translate along the vector from A to A'
3. Rotate 180 degrees around point A.

4. Are the two triangles shown below similar? If so, describe a sequence that would prove  $\triangle ABC \sim \triangle A'B'C'$ . If not, state how you know they are not similar.



$$\frac{A'C'}{AC} = \frac{4}{3} \approx 1.33$$

$$\frac{B'C'}{BC} = \frac{8}{6} = \frac{4}{3} \approx 1.33$$

$$\frac{A'B'}{AB} = \frac{10.67}{8} \approx 1.33$$

Since all of the ratios are equivalent, these triangles are similar!



