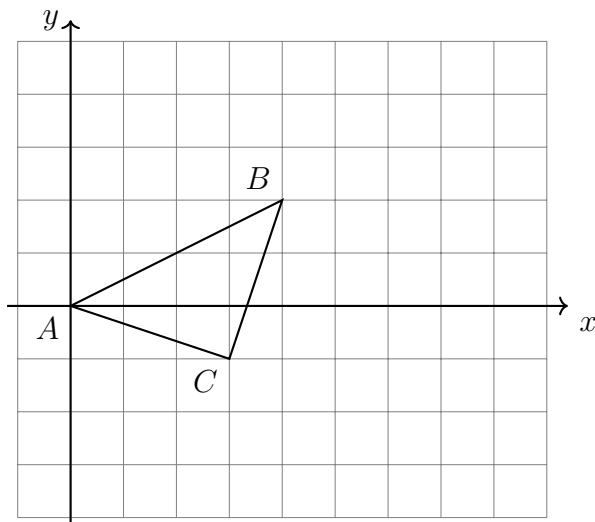


Name:

## 9.2 Classwork: Scale factor

CCSS.HSG.SRT.B.5

1. Dilate the triangle  $ABC \rightarrow A'B'C'$  by a factor of  $k = 2$  centered at the origin.



Complete the table of coordinate mappings.

$$A(0,0) \rightarrow A'(0,0)$$

2. A dilation centered at  $A$  with a scale factor of  $k = \frac{3}{2}$  maps  $\triangle ABC \rightarrow \triangle ADE$ .

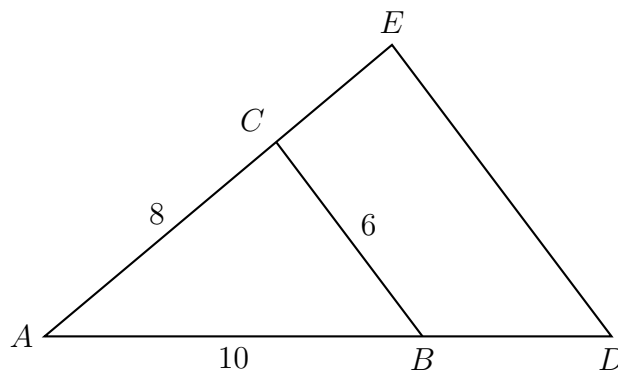
Given  $AB = 10$ ,  $BC = 6$ , and  $AC = 8$ .

Complete the table and mark the diagram.

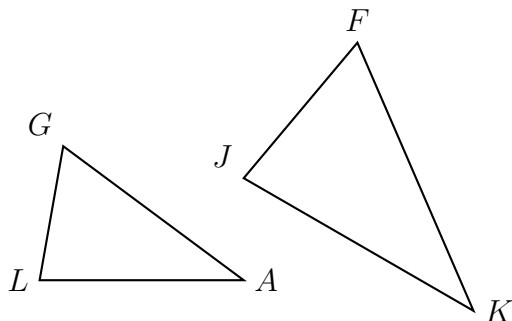
$$AD = \frac{3}{2} \times 10 =$$

$$DE =$$

$$AE =$$



3. Definition:  $\triangle LGA \sim \triangle JFK$  if and only if all three corresponding angles are congruent.



Are the given triangles similar?

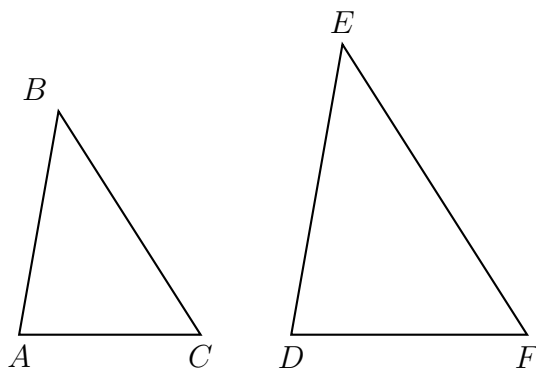
(a)  $m\angle L = 80^\circ$ ,  $m\angle A = 43^\circ$

Find  $m\angle G =$  \_\_\_\_\_

(b)  $m\angle J = 80^\circ$ ,  $m\angle F = 57^\circ$

Find  $m\angle K =$  \_\_\_\_\_

4. Given  $\triangle ABC \sim \triangle DEF$ . Mark the legs  $AB = 12$ ,  $BC = 18$ ,  $AC = 9$ , and  $DE = 15$ .



Find the scale factor and missing sides.

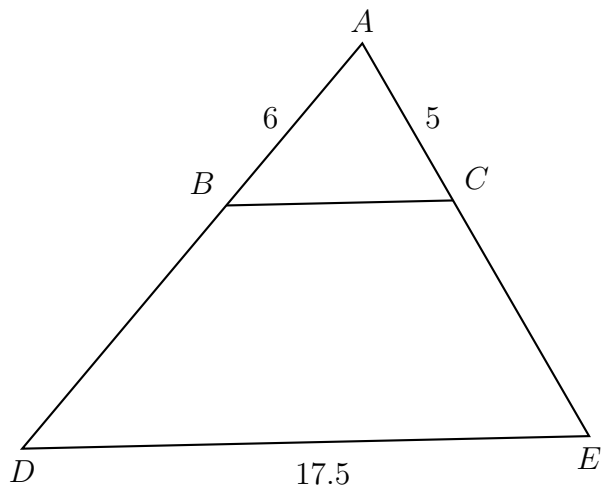
(a)  $k = \frac{DE}{AB} =$

(b)  $EF = k \times BC =$

(c)  $DF =$

5. Triangle  $ABC$  is dilated with a scale factor of  $k = 2.5$  centered at  $A$ , yielding  $\triangle ADE$ , as shown. Given  $AB = 6$ ,  $AC = 5$ , and  $DE = 17.5$ .

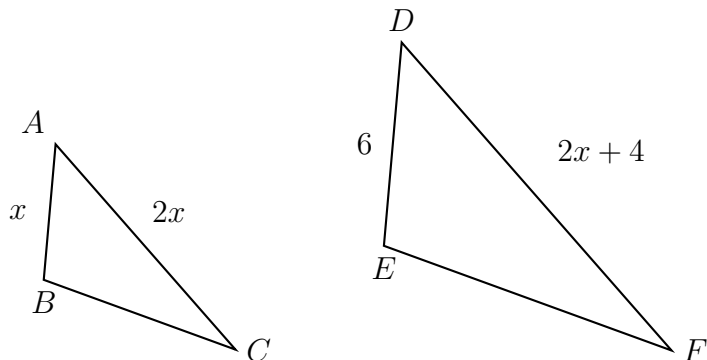
Find  $AD$ ,  $AE$ , and  $BC$ . Then find  $BD$  and  $CE$ .



6. A dilation centered at the origin and scale factor  $k$  maps  $P(2, 5) \rightarrow P'(5, 12.5)$ . Find  $k$ .

Name:

7. In the diagram below,  $\triangle ABC \sim \triangle DEF$ ,  $DE = 6$ ,  $AB = x$ ,  $AC = 2x$ , and  $DF = 2x + 4$ . Determine the length of  $\overline{AB}$ .



8. Theorem: If two triangles have two congruent pairs of corresponding angles, then the triangles are similar.

How would you prove this theorem, starting with the definition in #3, above.