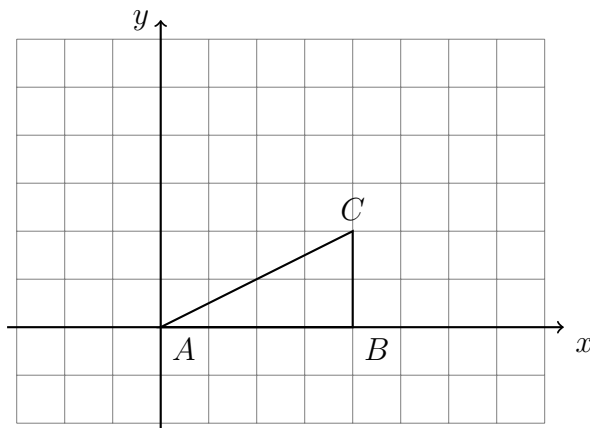


Name:

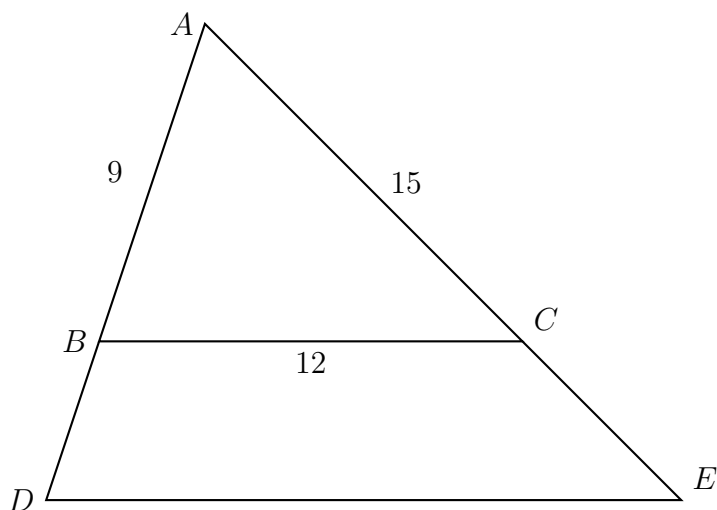
**5.4 Do Now: Similar triangles, dilation ratios**

1. On the graph below, dilate the triangle  $ABC$  by a factor of  $\frac{3}{2}$  centered on the origin.



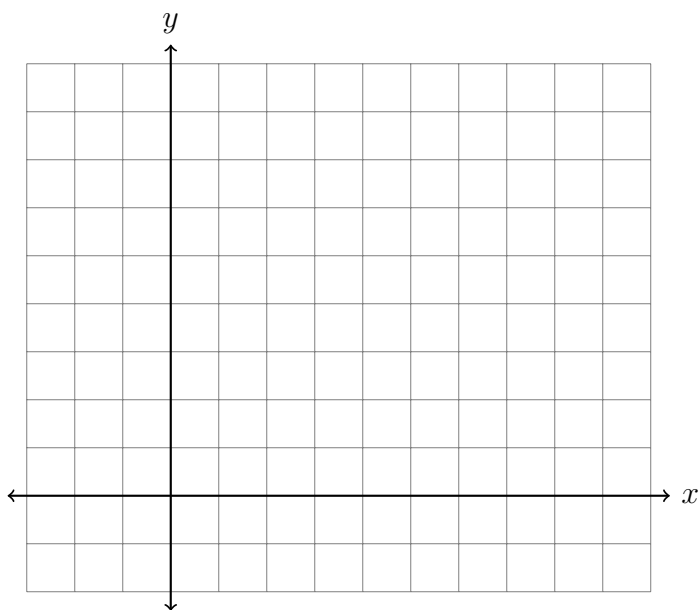
2. Triangle  $ABC$  is dilated with a factor of  $\frac{5}{3}$  centered at  $A$ , yielding  $\triangle ADE$ , as shown. Given  $AB = 9$ ,  $BC = 12$ , and  $AC = 15$ .

Find  $AD$ ,  $AE$ , and  $DE$ .



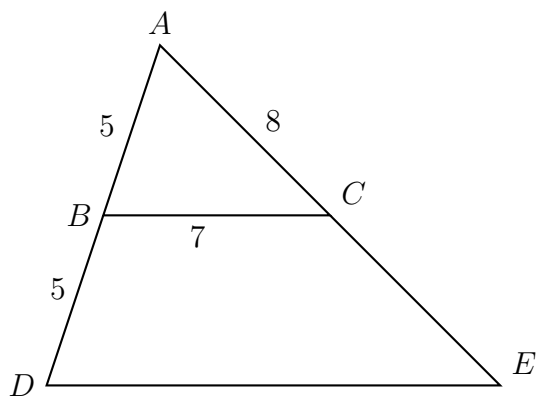
3. The coordinates of the endpoints of  $\overline{AB}$  are  $A(1, 2)$  and  $B(4, 2)$ . Determine the length of  $\overline{A'B'}$ , the image of  $\overline{AB}$ , after a dilation of  $k = 2$  centered at the origin.

Draw and label the two line segments,  $\overline{AB}$  and  $\overline{A'B'}$ , on the set of axes below.



4. Triangle  $ADE$  is drawn with  $\overline{BC} \parallel \overline{DE}$ , as shown. Given  $AB = 5$ ,  $BC = 7$ ,  $AC = 8$ , and  $BD = 5$ .

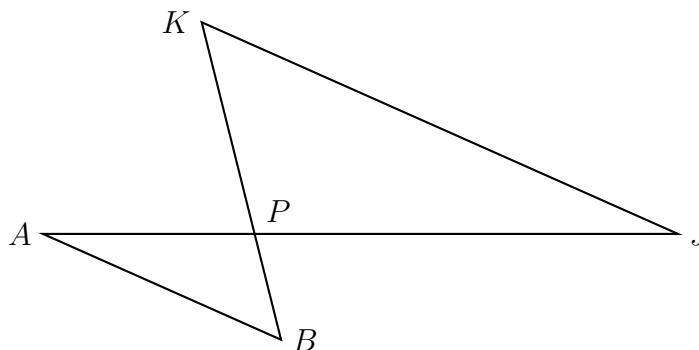
Find  $CE$ ,  $AE$ , and  $DE$ .



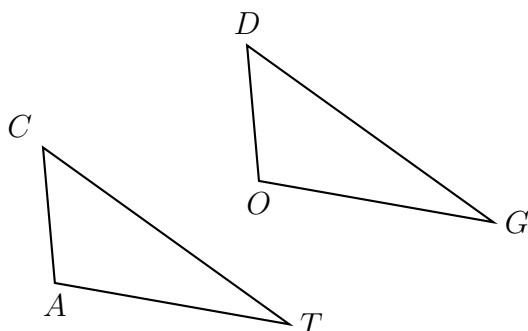
Name:

5. Given  $\triangle ABC \sim \triangle DEF$ .  $m\angle A = 40^\circ$  and  $m\angle E = 35^\circ$ .  
 Find the measure of  $\angle C$ .

6. Given  $\triangle ABP$  and  $\triangle JKP$  as shown below.  $\overline{AB} \parallel \overline{JK}$ .  $AP = 5.7$ ,  $JP = 11.4$ , and  $JK = 14.8$ . Find  $AB$ .



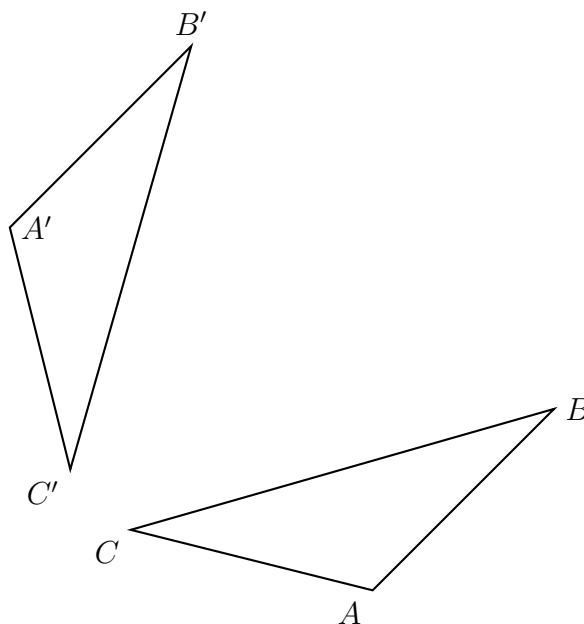
7. A translation maps triangle  $CAT$  onto triangle  $DOG$ .



Fill in the blank with the corresponding object.

- (a)  $A \rightarrow$  \_\_\_\_\_  
 (b)  $\angle CTA \cong$  \_\_\_\_\_  
 (c) \_\_\_\_\_  $\cong \overline{DG}$   
 (d) Justify  $\triangle CAT \cong \triangle DOG$ .

8. Using a compass and straightedge, construct the perpendicular bisector of  $\overline{BB'}$ .  
What transformation has been applied to map  $\triangle ABC$  on to  $\triangle A'B'C'$ ?



9. Triangle  $ABC$  is dilated with a factor of  $\frac{3}{2}$  centered at  $A$ , yielding  $\triangle ADE$ , as shown.  
Given  $AB = 10$ ,  $BC = 12$ , and  $AC = 14$ .  
Find  $AD$ ,  $AE$ , and  $DE$ .

