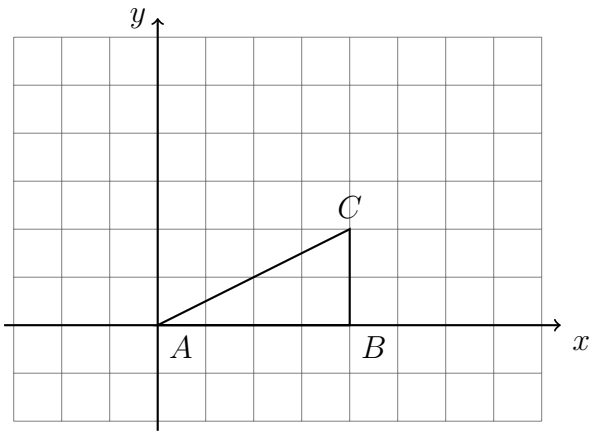
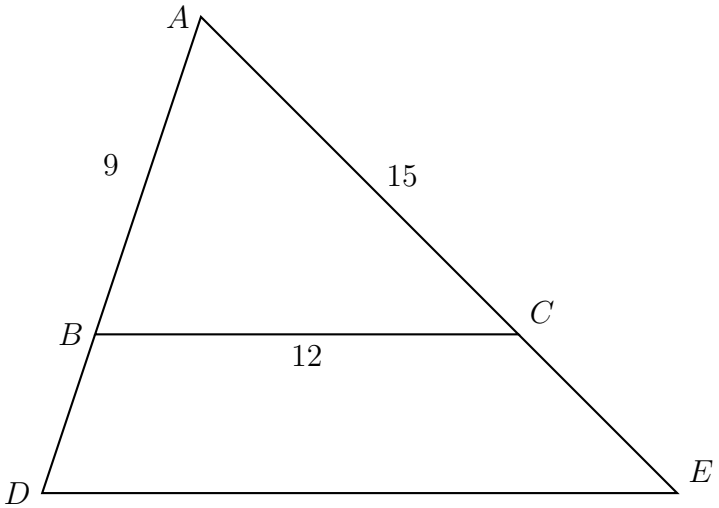
5.4 Do Now: Similar triangles, dilation ratios

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



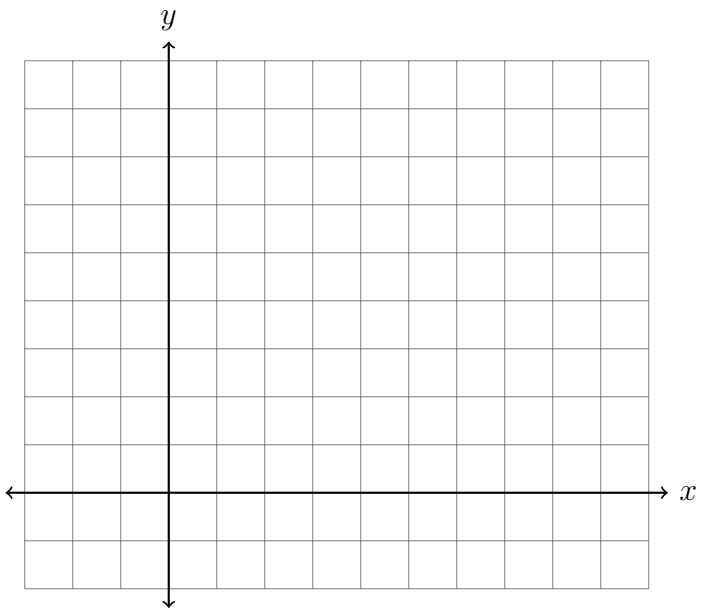
2. Triangle ABC is dilated with a factor of $\frac{5}{3}$ centered at A, yielding $\triangle ADE$, as shown. Given $AB = 9$, $BC = 12$, and $AC = 15$.

   Find AD, AE, and DE.



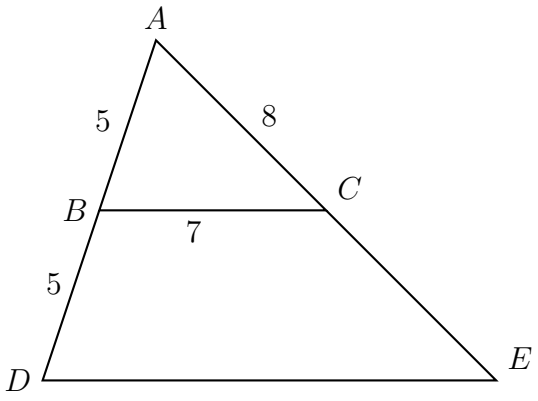
3. The coordinates of the endpoints of $\overline{AB}$ are $A(1, 2)$ and $B(4, 2)$. Determine the length of $\overline{A'B'}$, the image of $\overline{AB}$, after a dilation of $k = 2$ centered at the origin.

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



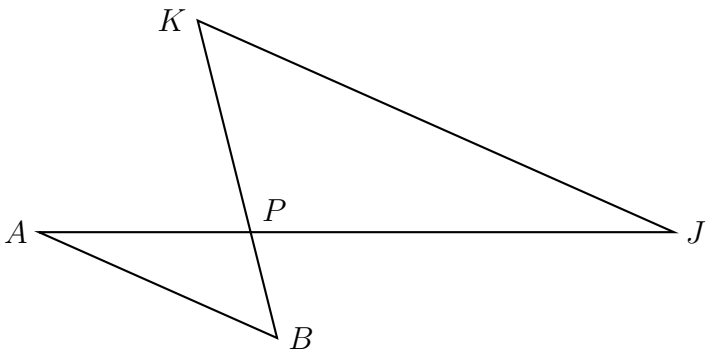
4. Given similar triangles $\triangle ABC \sim \triangle ADE$, as shown. Given $AB = 5$, $BC = 7$, $AC = 8$, and $BD = 5$.

   Find the scale factor k, DE, AE, and CE.

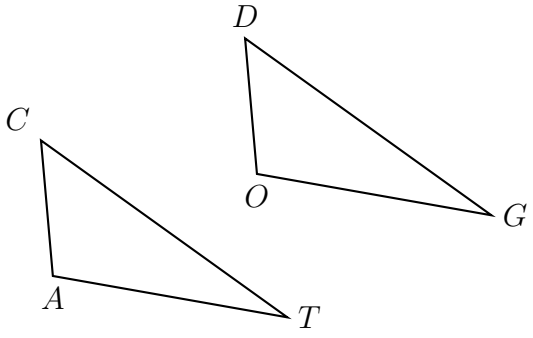


5. Given $\triangle ABC \sim \triangle DEF$. $m\angle A = 40°$ and $m\angle E = 35°$.
Find the measure of $\angle C$.

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



7. A translation maps triangle CAT onto triangle DOG.



Fill in the blank with the corresponding object.

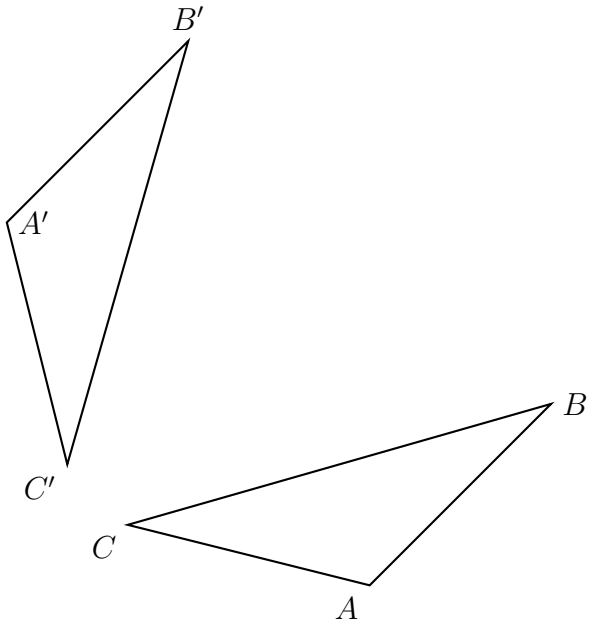
(a) $A \rightarrow$ _____

(b) $\angle CTA \cong$ _____

(c) _____ $\cong \overline{DG}$

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.