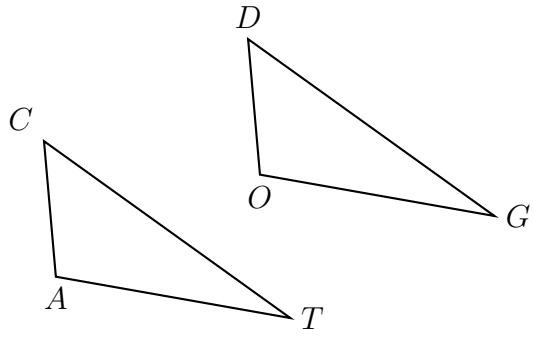
8-3 Do Now: Similar triangles, dilation ratios

1. A translation maps triangle CAT onto triangle DOG.



Fill in the blank with the corresponding object.

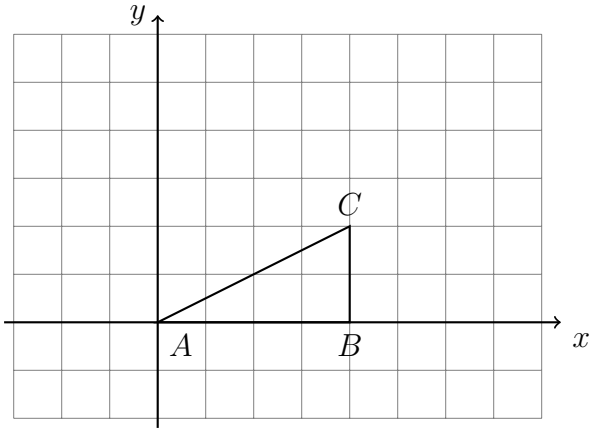
(a) $A \rightarrow$ _____

(b) $\angle CTA \cong$ _____

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

(d) Justify $\triangle CAT \cong \triangle DOG$.

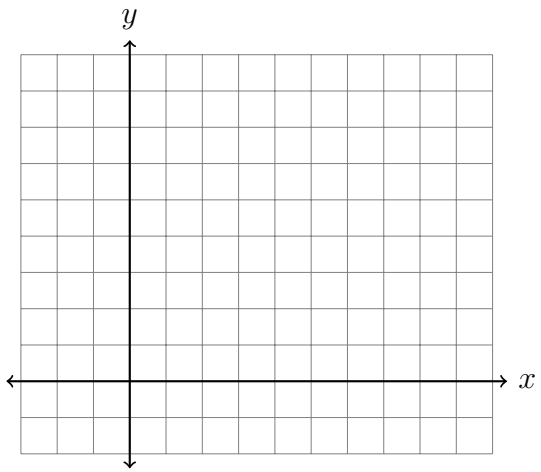
2. On the graph below, dilate the triangle ABC by a factor of $\frac{3}{2}$ centered on the origin.



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

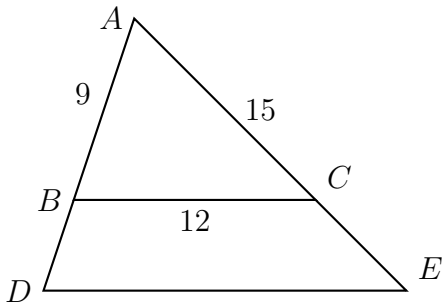
4. The coordinates of the endpoints of $\overline{AB}$ are $A(4, 1)$ and $B(0, 4)$. Determine the length of $\overline{A'B'}$, the image of $\overline{AB}$, after a dilation of 2 centered at the origin.

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



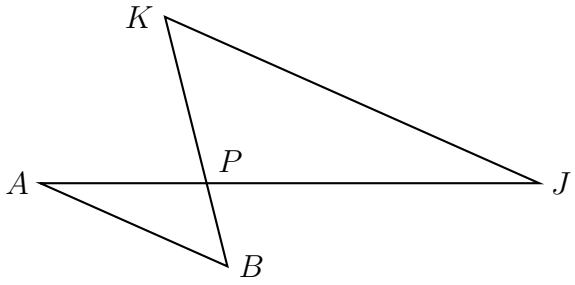
5. Triangle ABC is dilated with a factor of $\frac{5}{3}$ centered at A, yielding $\triangle ADE$, as shown. Given $AB = 9$, $BC = 12$, and $AC = 15$.

   Find AD, AE, and DE.



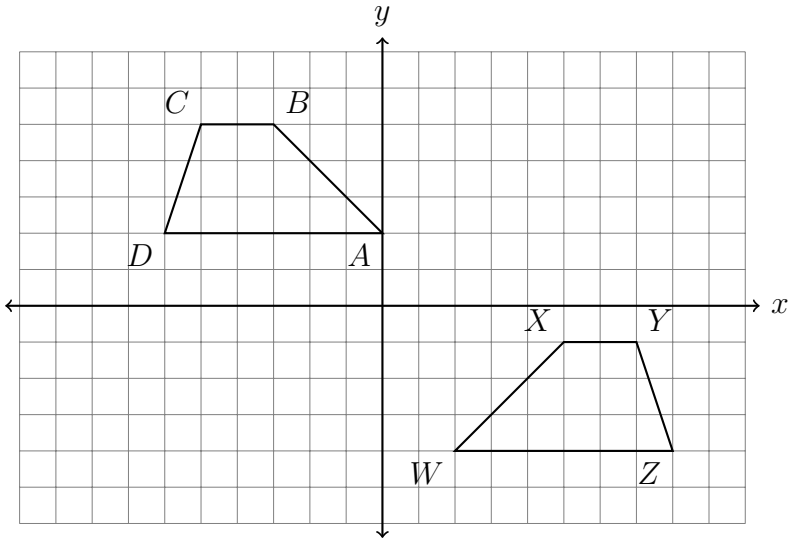
8-3 Classwork: Similar triangles, dilation ratios

1. Given $\triangle ABP$ and $\triangle JKP$ as shown below. $\overline{AB} \parallel \overline{JK}$. Prove $\triangle ABP \sim \triangle JKP$.



Statement	Reason
1) $\triangle ABP$, $\triangle JKP$	1) Given
2) _____	2) Given
3) $\angle APB \cong \angle JPK$	3) _____
4) $\angle PAB \cong \angle PJK$	4) _____
5) $\triangle ABP \sim \triangle JKP$	5) _____

2. The trapezoid $ABCD$, shown below, undergoes two rigid motions carrying it onto trapezoid $WXYZ$. State the two isometric transformations. (be specific)

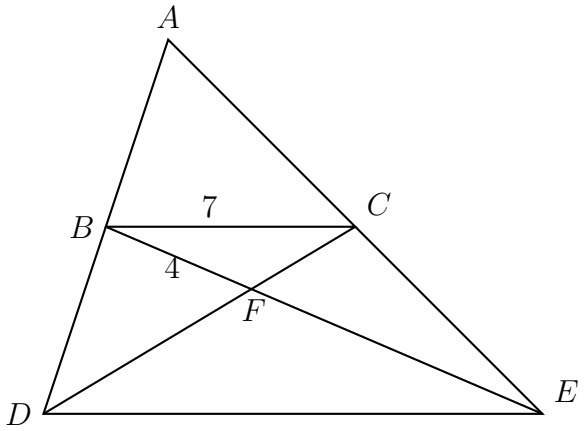


3. Triangle ADE and its midline $\overline{BC}$ are drawn, with B the midpoint of $\overline{AD}$ and C the midpoint of $\overline{AE}$. The two medians $\overline{AE}$ and $\overline{AE}$ are drawn, as shown, intersecting in point F, the centroid.

   $\triangle FCB \sim \triangle FDE$ with scale factor $k = 2$.

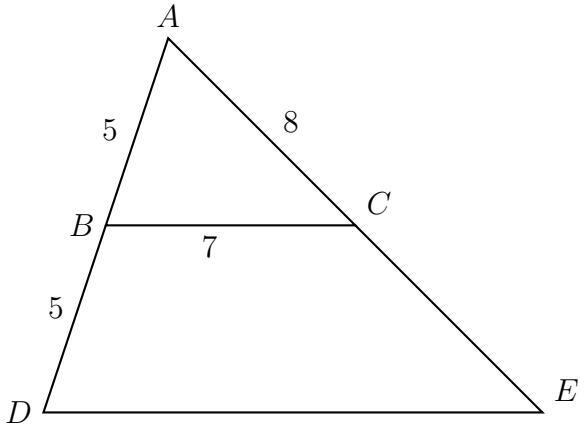
   Given $BC = 7$, find DE.

   Given $BF = 4$, find FE.



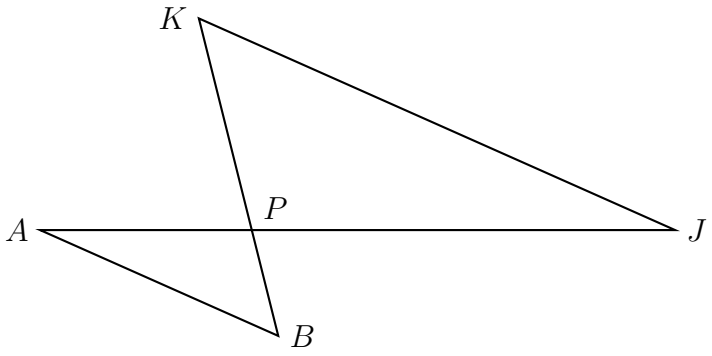
4. Triangle ADE is drawn with $\overline{BC} \parallel \overline{DE}$, as shown. Given $AB = 5$, $BC = 7$, $AC = 8$, and $BD = 5$.

   Find CE, AE, and DE.



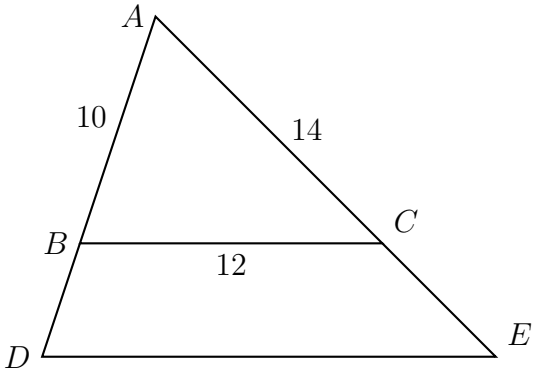
8-3 Homework: Similar triangles, dilation ratios

1. 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.



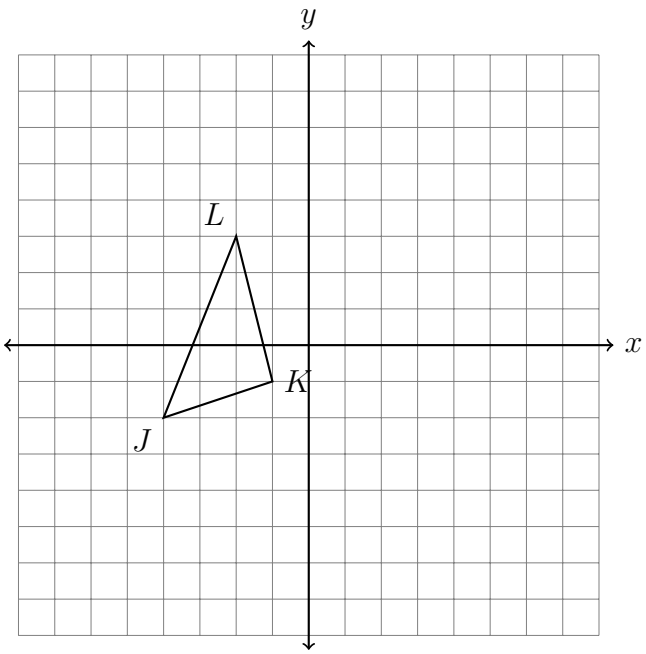
2. Triangle ABC is dilated with a factor of $\frac{3}{2}$ centered at A, yielding $\triangle ADE$, as shown. Given $AB = 10$, $BC = 12$, and $AC = 14$.

   Find AD, AE, and DE.



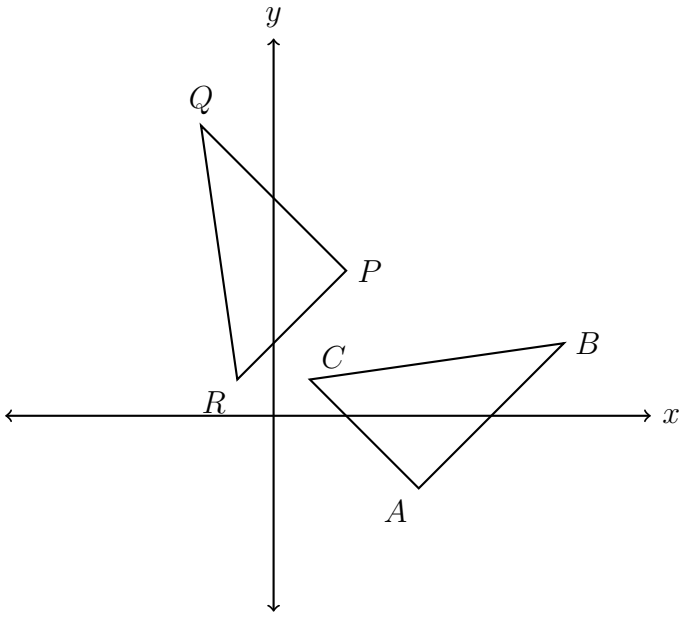
3. The vertices of $\triangle JKL$ have the coordinates $J(-4,-2)$, $K(-1,-1)$, and $L(-2,3)$, as shown below.

   Apply a translation of $(x,y) \to (x+7, y+2)$ to $\triangle JKL$ and then reflect the image across the x-axis. Draw both images $\triangle J'K'L'$ and $\triangle J''K''L''$ on the set of axes below, labeling the vertices.



4. A rotation of 90° is applied to $\triangle ABC$, mapping it onto $\triangle PQR$, as shown.

   Which triangle has the larger area, or are they equal? Justify your answer.



5. Using a compass and straightedge, construct the perpendicular bisector of $\overline{BB'}$

   What transformation has been applied to map $\triangle ABC$ on to $\triangle A'B'C'$?