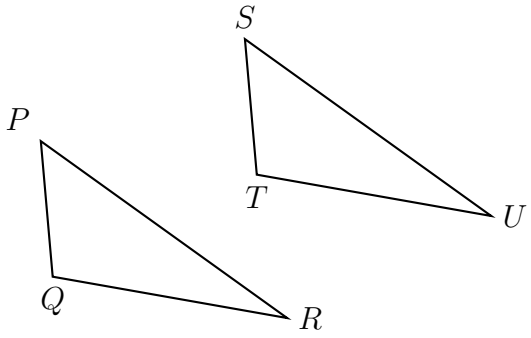
8-9 Do Now Quiz: Similar triangles, dilation ratios

1. A translation maps triangle PQR onto triangle STU.



Write each corresponding object.

(a) $Q \to$ _____

(b) $\angle QRP \cong$ _____

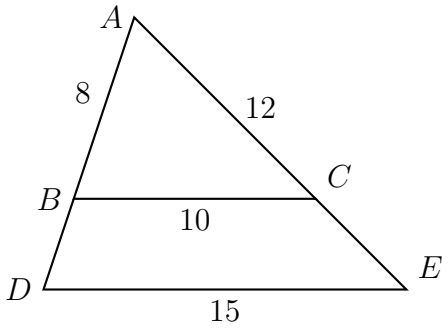
(c) _____ $\cong \overline{ST}$

(d) Justify $\triangle PQR \cong \triangle STU$. Use the words "rigid motion" and "$SSS\triangle \cong$."

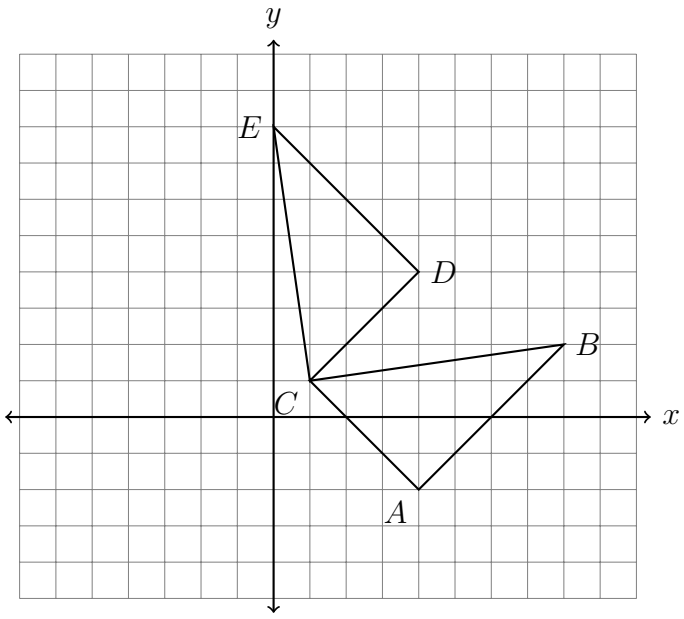
2. Given $\triangle JKL \sim \triangle MNO$. $m\angle K = 40°$ and $m\angle M = 100°$.
Find the measure of $\angle L$.

3. Triangle ABC is dilated with a scale factor of k centered at A, yielding $\triangle ADE$, as shown. Given $AB = 8$, $BC = 10$, $AC = 12$, and $DE = 15$.

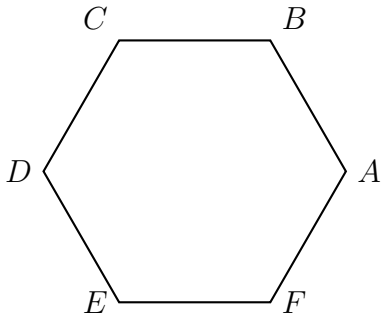
Find AD, CE, and k (the scale factor).



4. What transformation maps $\triangle ABC$ onto $\triangle DEC$, shown below? Fully specify the transformation.

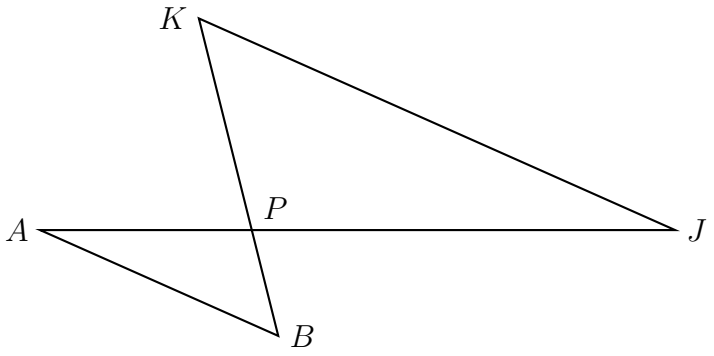


5. What angle of rotation about its center would map hexagon $ABCDEF$ onto itself?



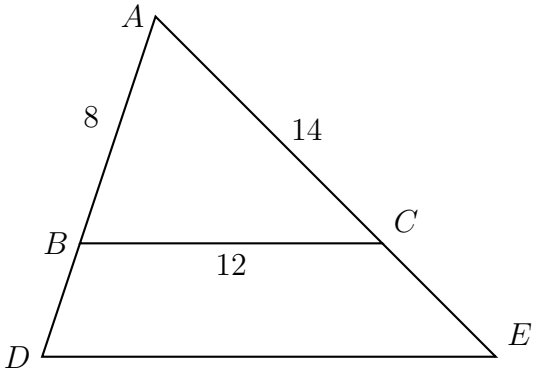
8-9 Homework: Similar triangles, dilation, symmetry

1. Given $\triangle ABP$ and $\triangle JKP$ as shown below. $\overline{AB} \parallel \overline{JK}$. $AP = 7$, $JP = 14$, and $JK = 18$. Find AB.

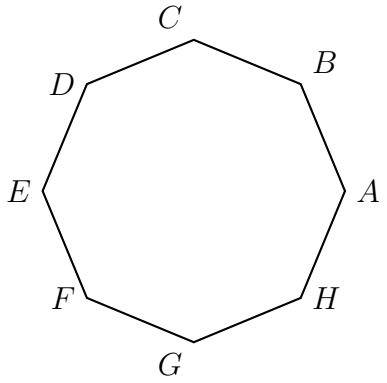


2. Triangle ABC is dilated with a factor of $\frac{5}{4}$ centered at A, yielding $\triangle ADE$, as shown. Given $AB = 8$, $BC = 12$, and $AC = 14$.

   Find BD, AE, and DE.

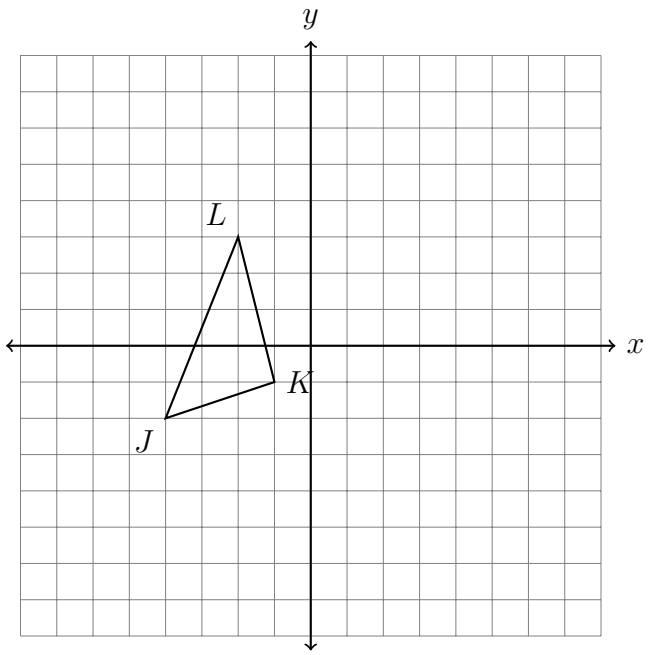


3. What angle of rotation about its center would map octagon $ABCDEFGH$ onto itself?



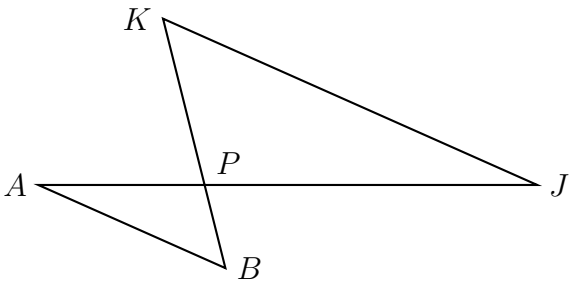
4. The vertices of $\triangle JKL$ have the coordinates $J(-4,-2)$, $K(-1,-1)$, and $L(-2,3)$, as shown below.

   Apply a translation of $(x,y) \to (x-3, y+2)$ to $\triangle JKL$ and then reflect the image across the y-axis. Draw both images $\triangle J'K'L'$ and $\triangle J''K''L''$ on the set of axes below, labeling the vertices.



5. Given $\triangle ABP$ and $\triangle JKP$ as shown below. $\overline{AB} \parallel \overline{JK}$ with $AB = 5$, $PA = 4$, $PB = 2$, and $PK = 5$.

   Find PJ and JK.

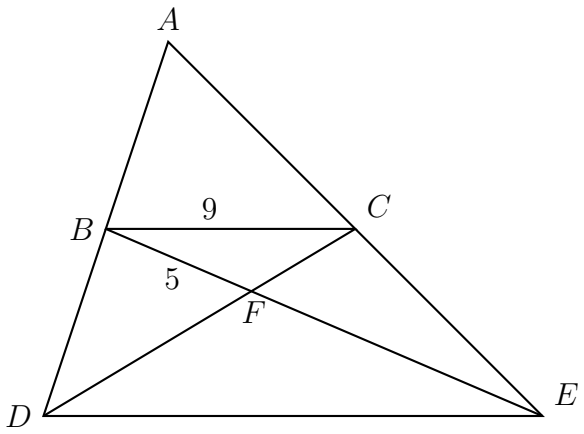


6. Triangle ADE and its midline $\overline{BC}$ are drawn, with B the midpoint of $\overline{AD}$ and C the midpoint of $\overline{AE}$. The two medians $\overline{AE}$ and $\overline{AE}$ are drawn, as shown, intersecting in point F, the centroid.

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

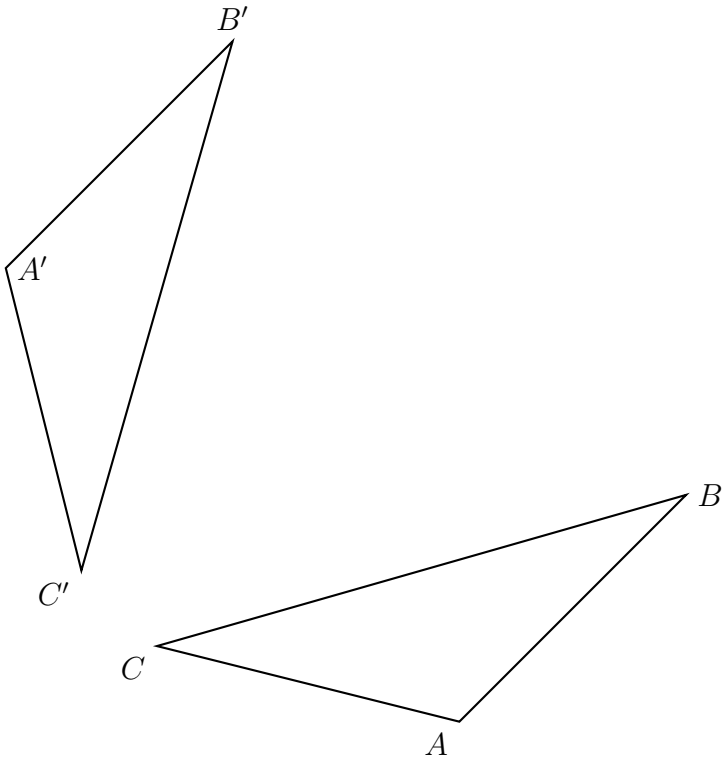
   Given $BC = 9$, find DE.

   Given $BF = 5$, find FE.



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

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


B'
A'
C'
B
C
A