

Name:

8-10 Do Now: Similar triangles, dilation ratios

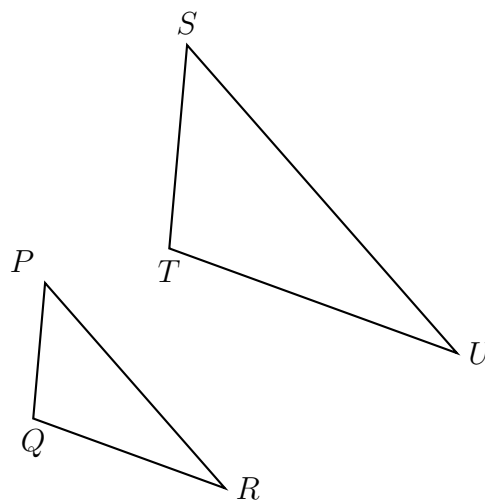
1. A dilation maps triangle PQR onto triangle STU with $QR = 4$ and $TU = 6$.

(a) $\overline{QR} \rightarrow$ _____

- (b) Complete the fraction numerators with the corresponding segment and length:

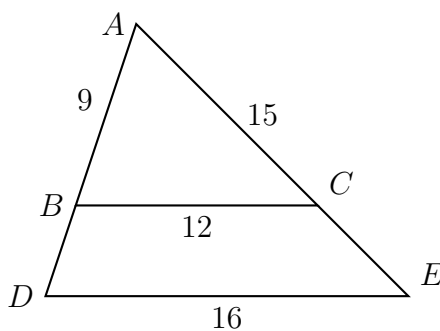
$$k = \frac{\overline{QR}}{\overline{QR}} = \frac{\quad}{4}$$

- (c) What scale factor maps $\triangle PQR \rightarrow \triangle STU$?



2. Triangle ABC is dilated with a scale factor of k centered at A , yielding $\triangle ADE$, as shown. Given $AB = 9$, $BC = 12$, $AC = 15$, and $DE = 16$.

Find BD , AE , and k (the scale factor).



3. Given $\triangle JKL \sim \triangle MNO$. $m\angle J = 38^\circ$ and $m\angle L = 92^\circ$.
Find the measure of $\angle N$.

4. The diagram below shows $\triangle ABC$, with \overline{AEB} , \overline{ADC} , and $\angle ACB \cong \angle AED$. $AB = 8$, $AD = 4$, and $DE = 2$.

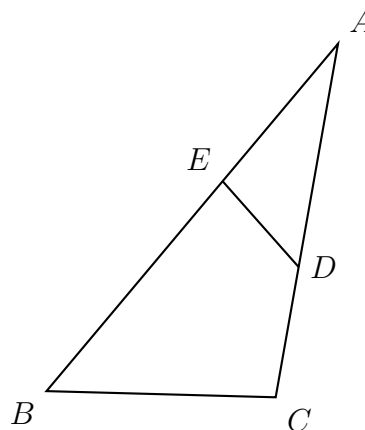
(a) $\triangle ADE \rightarrow$ _____

(b) $\overline{AD} \rightarrow$ _____

(c) What is the scale factor?

$k =$ _____

(d) What is the length of \overline{BC} ?



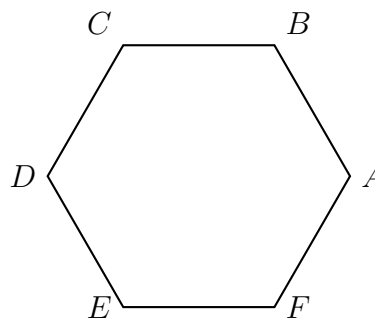
5. Circle YES or NO to indicate whether the given transformation maps the hexagon $ABCDEF$ onto itself.

(a) Yes No A rotation of 120° counterclockwise around its center.

(b) Yes No A reflection over \overleftrightarrow{AD}

(c) Yes No A reflection over a line through the midpoints of \overline{BC} and \overline{EF} .

(d) Yes No A rotation of 60° clockwise around A .

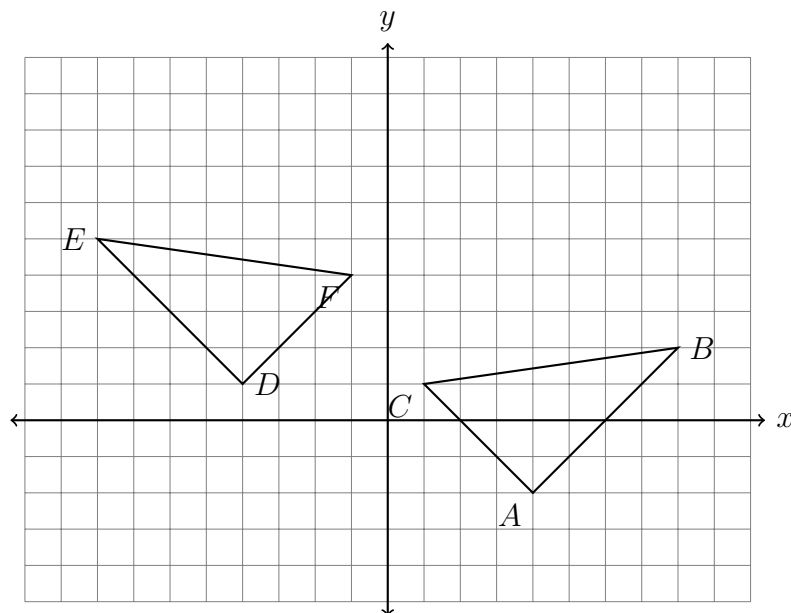


6. What is the length of the segment $A(-2, 5)$, $B(4, 13)$?

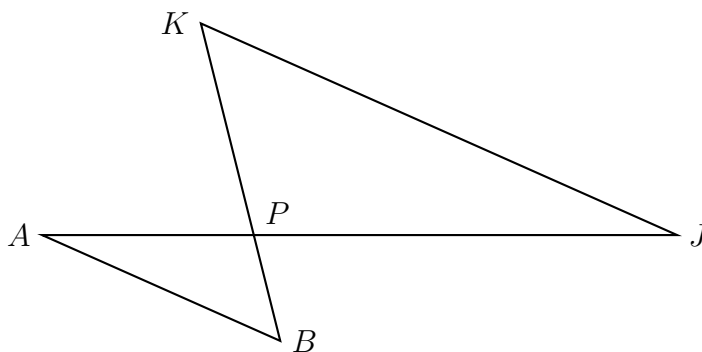
Name:

8-10 Homework: Pretest on similar triangles, dilation, & symmetry

1. What series of transformations map $\triangle ABC$ onto $\triangle DEC$, shown below? Fully specify the transformations.

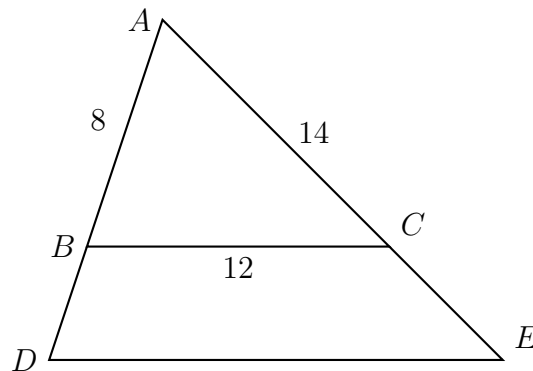


2. Given $\triangle ABP$ and $\triangle JKP$ as shown below. $\overline{AB} \parallel \overline{JK}$. $AP = 10$, $JP = 18$, and $JK = 27$. Find AB .

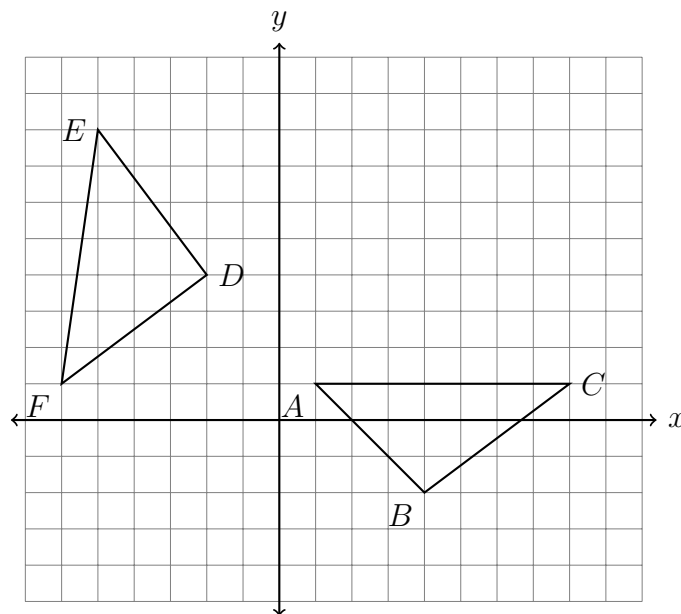


3. Triangle ABC is dilated with a factor of $\frac{3}{2}$ centered at A , yielding $\triangle ADE$, as shown. Given $AB = 8$, $BC = 12$, and $AC = 14$.

Find BD , AE , and DE .



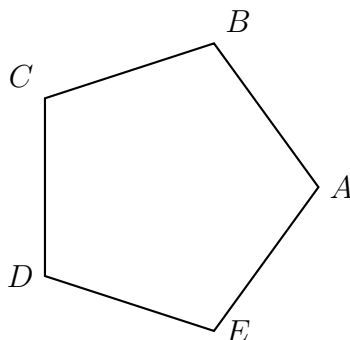
4. The grid shows $\triangle ABC$ and $\triangle DEF$.



Let $\triangle A'B'C'$ be the image of $\triangle ABC$ after a rotation about point A . Determine and state the location of B' if the location of point C' is $(1,8)$. Explain your answer, supported by stating the transformation applied.

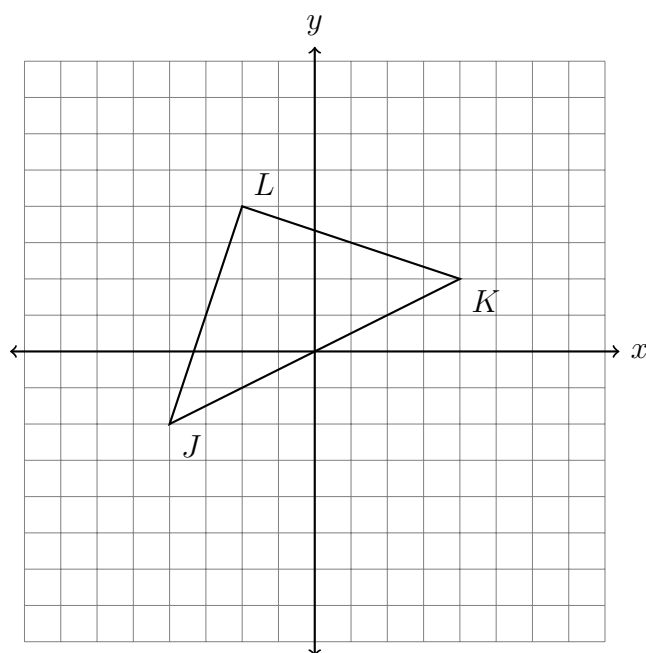
Name:

5. What is the smallest non-zero angle of rotation about its center that would map pentagon $ABCDE$ onto itself?



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

Apply a dilation to $\triangle JKL \rightarrow \triangle J'K'L'$, centered on the origin and with a scale factor $k = 1.5$. Draw the image $\triangle J'K'L'$ on the set of axes below, labeling the vertices, and make a table showing the correspondence of both triangles' coordinate pairs.

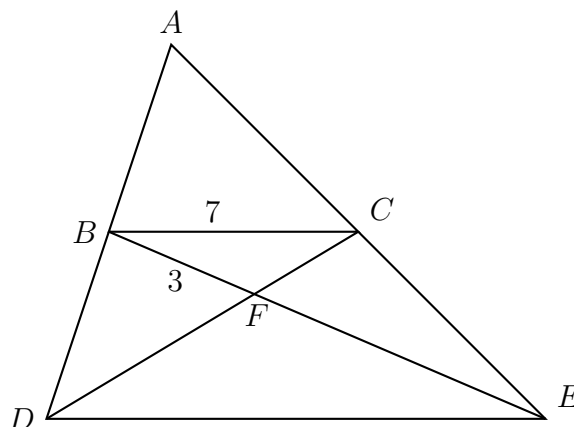


7. Triangle ADE and its midline \overline{BC} are drawn, with B the midpoint of \overline{AD} and C the midpoint of \overline{AE} . The two medians \overline{BE} and \overline{CD} are drawn, as shown, intersecting in point F , the centroid.

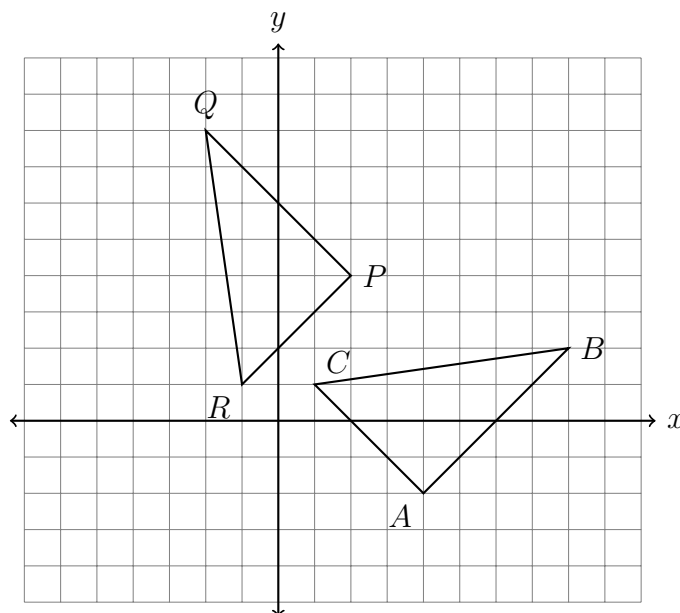
$\triangle FCB \sim \triangle FDE$ with scale factor $k = 2$.

Given $BC = 7$, find DE .

Given $BF = 3$, find FE .

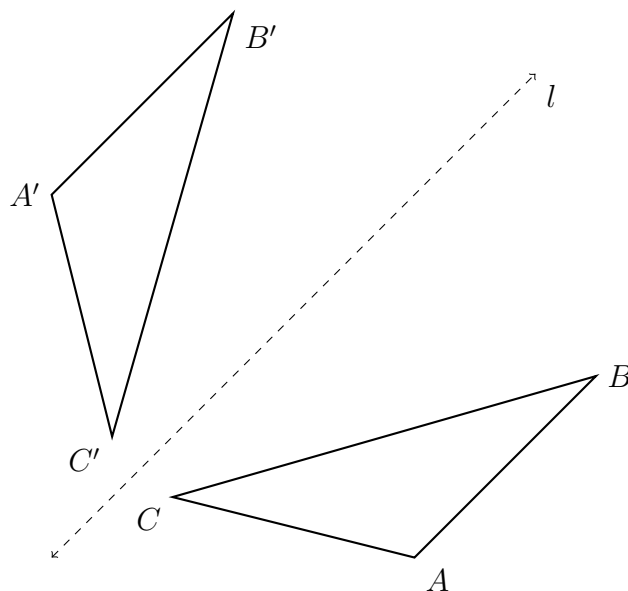


8. Determine and state the transformation or sequence of transformations applied to $\triangle ABC$, mapping it onto $\triangle PQR$, as shown.

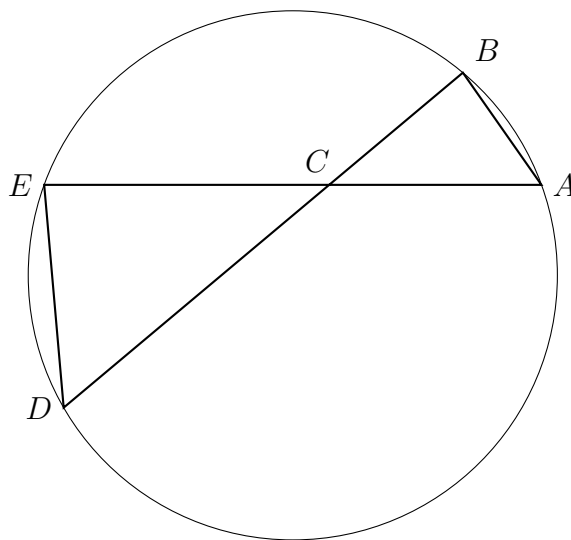


Name:

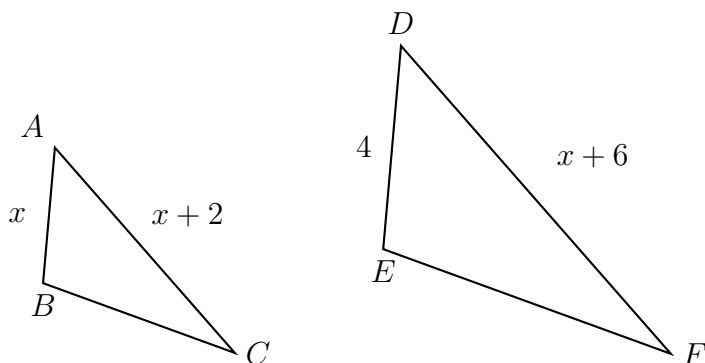
9. The $\triangle ABC$ is reflected across l to yield $\triangle A'B'C'$. $AB = x + 5$, $A'B' = 2x - 1$, and $BC = 3x + 2$. Find the length $B'C'$.



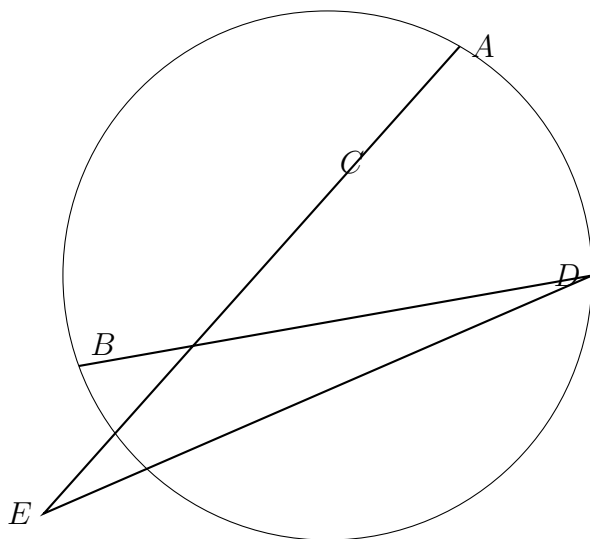
10. In the diagram below, the chords \overline{AE} and \overline{BD} intersect at C . Given that $\triangle ABC \sim \triangle DEC$, $AB = 2$, $DE = 4$, and $AC = 3$. Determine the length of \overline{CD} .



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



12. In the diagram below, the chords \overline{AE} and \overline{BD} intersect at C . Given that $\triangle ABC \sim \triangle DEC$, $AB = 2$, $DE = 4$, and $AC = 3$. Determine the length of \overline{CD} .



13. 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 .

Name:

