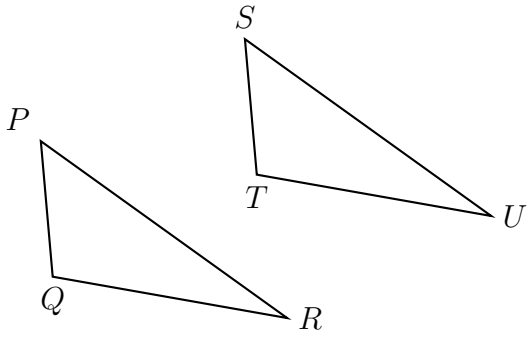
5.9 Do Now: Transformations and review

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".

2. A dilation with $k = 3$ centered at the origin maps $\triangle DEF$ onto $\triangle LMN$.

The following is given:

$DE = 10$
$m\angle E = 40°$
$m\angle F = 110°$
$m\angle M = 2x + 10°$

Fill in the blanks:

(a) $D \to$ _____

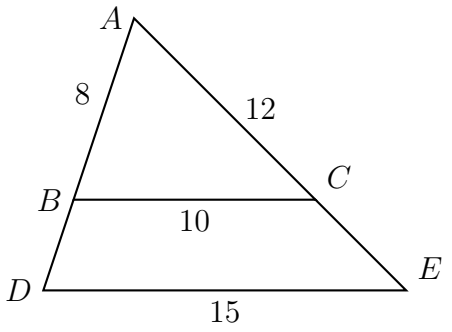
(b) $LM =$ _____

(c) $m\angle M =$ _____

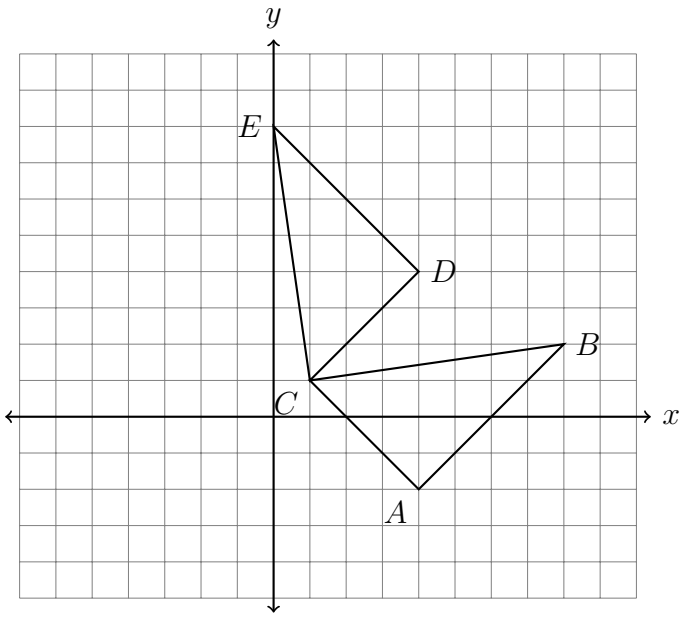
(d) Solve for x

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).

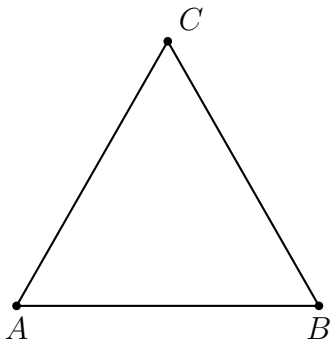


4. What transformation maps $\triangle ABC$ onto $\triangle DEC$, shown below? Fully specify the transformation.

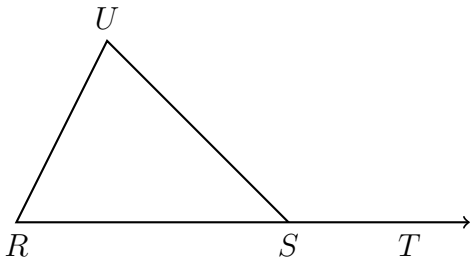


5. Given $\triangle JKL \sim \triangle MNO$. $m\angle K = 40°$ and $m\angle M = 100°$.
Find the measure of $\angle N$.

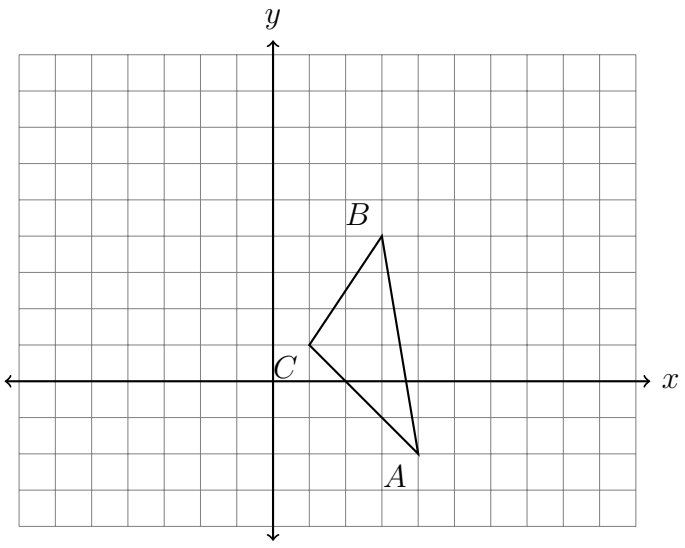
6. Given isosceles $\triangle ABC$ with $\overline{AC} \cong \overline{AB}$, $m\angle A = x$, $m\angle B = 55$, and $m\angle C = y$. Find x and y. (*the diagram is not to scale*)



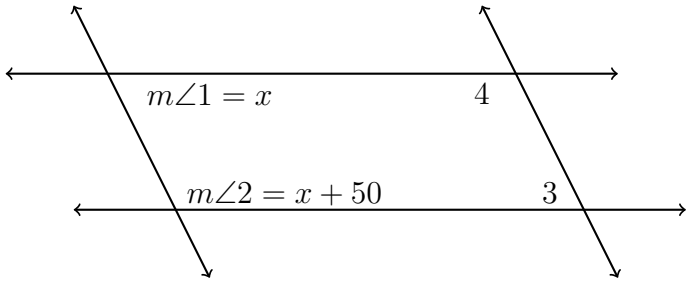
7. Given isosceles $\triangle RSU$ with $\overline{UR} \cong \overline{RS}$. If $m\angle UST = 140$ find $m\angle U$.



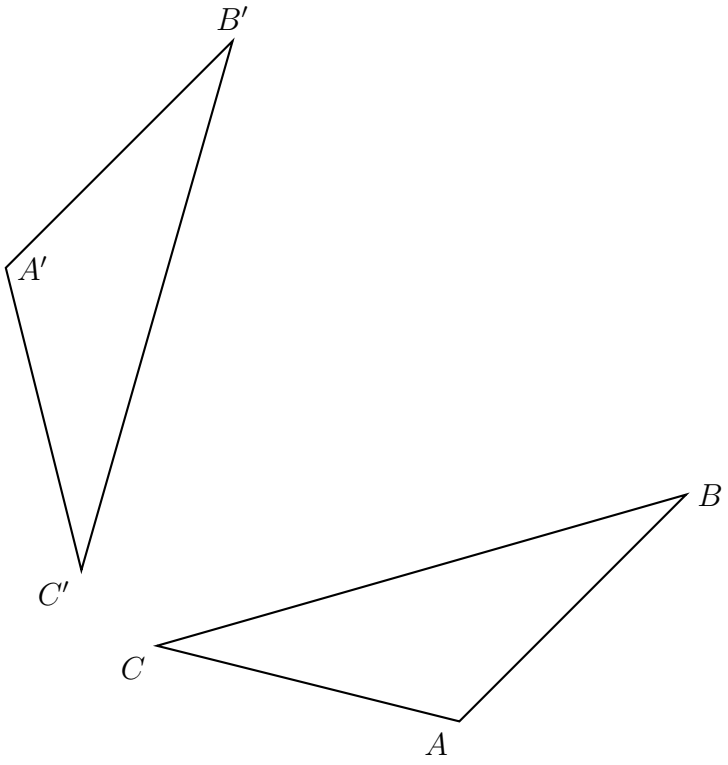
8. Translate $\triangle ABC$ by $(x, y) \to (x + 3, y + 4)$. Make a table of the coordinates and plot and label the image on the axes.



9. Two parallel lines intersect a second set of parallel lines. Given $m\angle 1 = x$ and $m\angle 2 = x + 50$, find the measure of $\angle 4$.



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



11. Given parallel lines $\overleftrightarrow{AB} \parallel \overleftrightarrow{CDE}$ with $\overline{AC} \cong \overline{AD}$. If $m\angle BAD = 70$ find $m\angle ACD$.