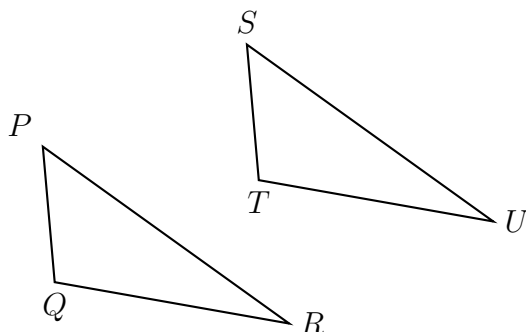


**5.9 Do Now: Transformations and review**

1. A translation maps triangle  $PQR$  onto triangle  $STU$ .



- (a)  $Q \rightarrow$  \_\_\_\_\_  
 (b)  $\angle QRP \cong$  \_\_\_\_\_  
 (c) \_\_\_\_\_  $\cong \overline{ST}$   
 (d) Justify  $\triangle PQR \cong \triangle STU$ . Use the words “rigid motion”.

Write each corresponding object.

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

The following is given:

Fill in the blanks:

$$DE = 10$$

$$m\angle E = 40^\circ$$

$$m\angle F = 110^\circ$$

$$m\angle M = 2x + 10^\circ$$

(a)  $D \rightarrow$  \_\_\_\_\_

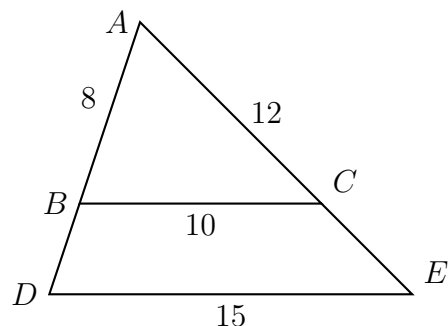
(b)  $LM =$  \_\_\_\_\_

(c)  $m\angle M =$  \_\_\_\_\_

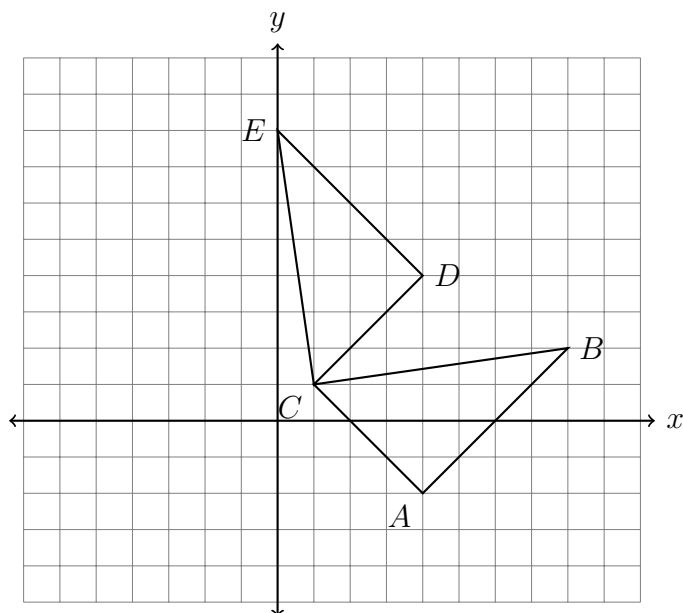
(d) Solve for  $x$

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).

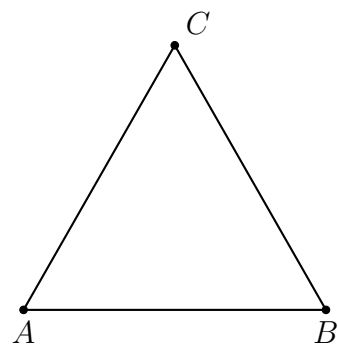


4. What transformation maps  $\triangle ABC$  onto  $\triangle DEC$ , shown below? Fully specify the transformation.

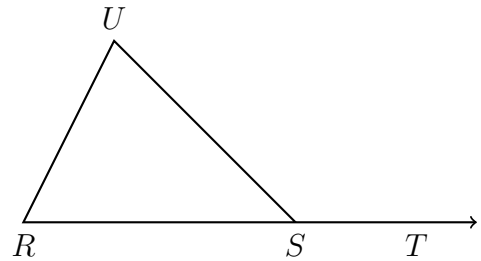


5. Given  $\triangle JKL \sim \triangle MNO$ .  $m\angle K = 40^\circ$  and  $m\angle M = 100^\circ$ . Find the measure of  $\angle N$ .

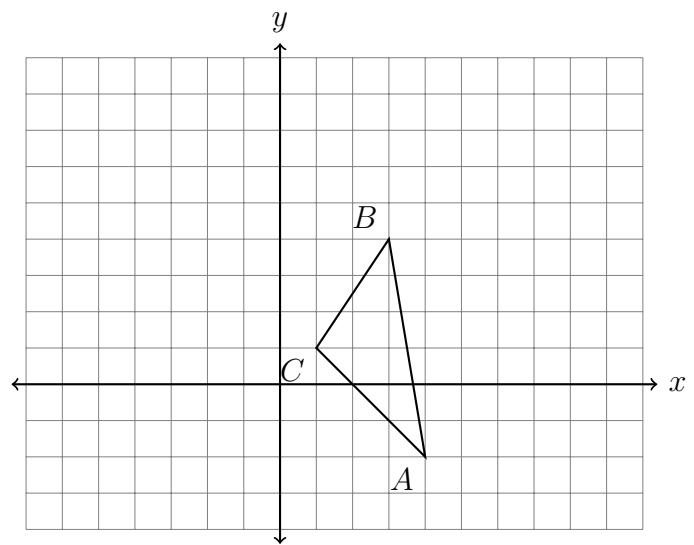
6. Given isosceles  $\triangle ABC$  with  $\overline{AC} \cong \overline{AB}$ ,  $m\angle A = x$ ,  $m\angle B = 55$ , and  $m\angle C = y$ . Find  $x$  and  $y$ .  
(the diagram is not to scale)



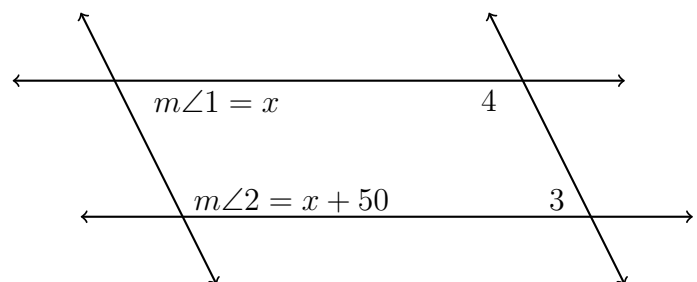
7. Given isosceles  $\triangle RSU$  with  $\overline{UR} \cong \overline{US}$ . If  $m\angle UST = 140$  find  $m\angle U$ .



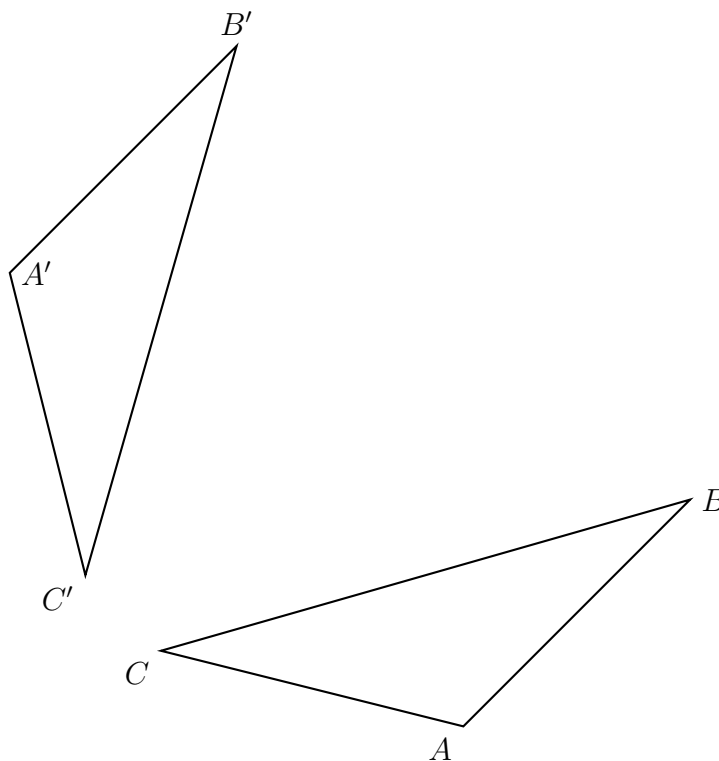
8. Translate  $\triangle ABC$  by  $(x, y) \rightarrow (x + 3, y + 4)$ . Make a table of the coordinates and plot and label the image on the axes.



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  $m\angle ACD$ .

