Unit 6: Distance & slope Name:
11 December 2019

5.9 Do Now: Transformations and review

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

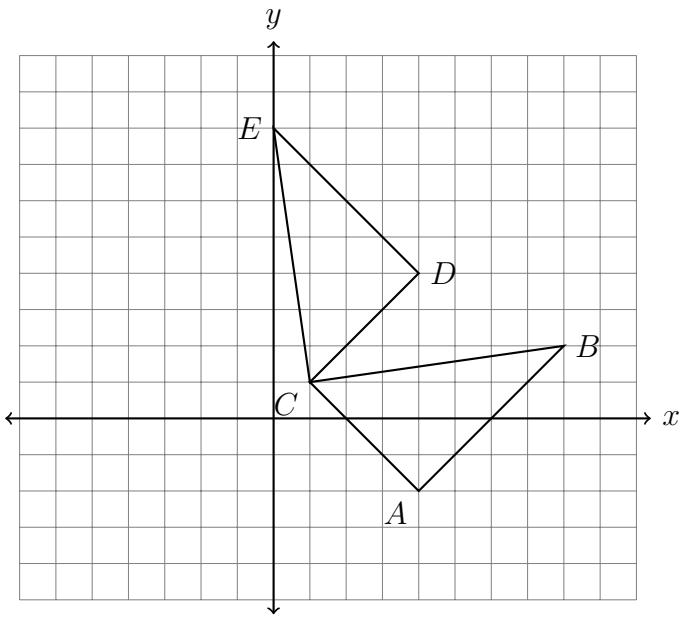
   The following is given:

   $DE = 7.5$
   $m\angle E = 43°$
   $m\angle F = 108°$
   $m\angle M = 5x + 8°$

   Fill in the blanks:

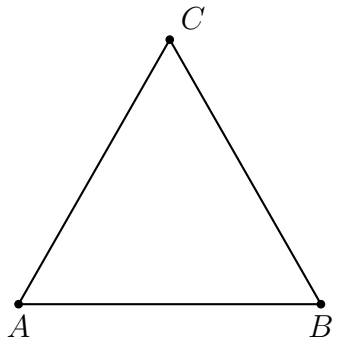
   (a) $D \rightarrow$ _____
   (b) $LM =$ _____
   (c) $m\angle M =$ _____
   (d) Solve for x

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

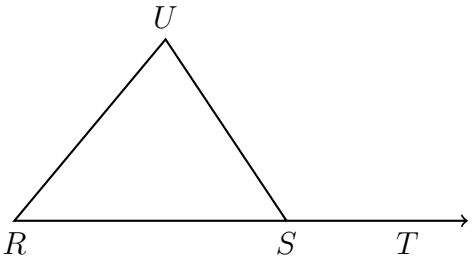


3. A translation maps $X(1, 6) \rightarrow X'(-2, 9)$. What is the image of $Y(10, -2)$ under the same translation?

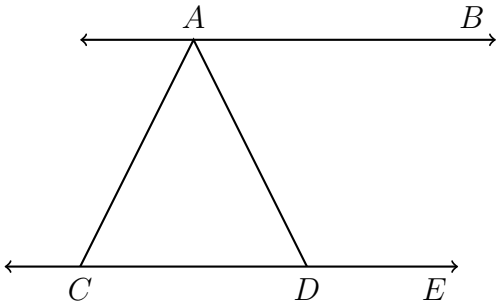
4. Given isosceles $\triangle ABC$ with $\overline{AC} \cong \overline{AB}$, $m\angle A = x$, $m\angle B = 57$, and $m\angle C = y$. Find x and y. (*the diagram is not to scale*)



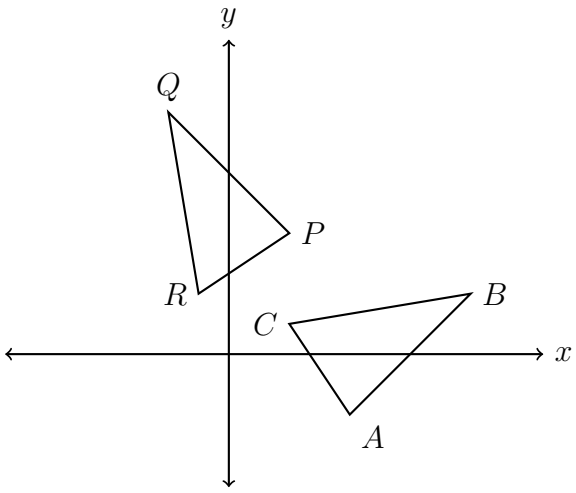
5. Given isosceles $\triangle RSU$ with $\overline{UR} \cong \overline{RS}$. If $m\angle UST = 130$ find $m\angle U$.
(*the diagram is not to scale*)



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

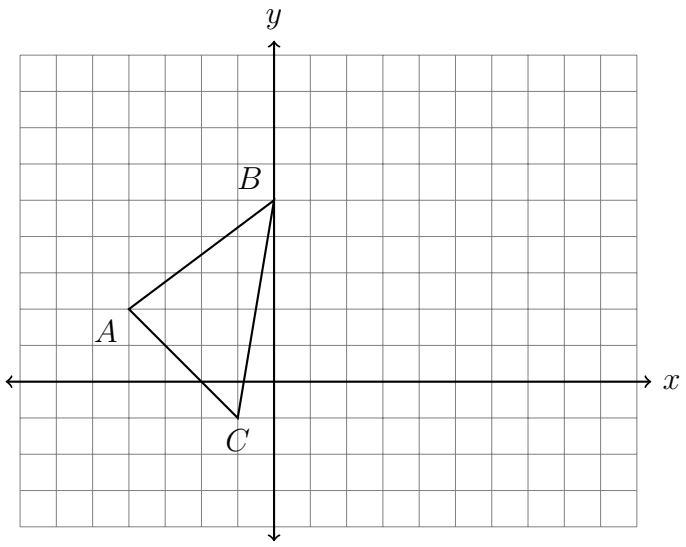


7. A rotation of 90° is applied to $\triangle ABC$, mapping it onto $\triangle PQR$, as shown. Which triangle has the larger area, or are they equal? Justify your answer.



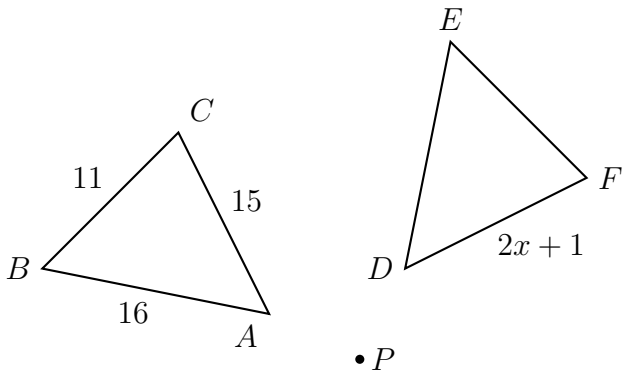
8. Find the image of $P(3, 1)$ after the translation $(x, y) \to (x - 7, y + 2)$.

9. Translate $\triangle ABC$ by $(x, y) \to (x + 5, y - 2)$. Make a table of the coordinates and plot and label the image on the axes.



10. In the diagram below, $\triangle ABC$ with sides of 11, 15, and 16, is mapped onto $\triangle DEF$ after a clockwise rotation of 90° about point P.

    If $DF = 2x + 1$, what is the value of x?



11. Translate $\triangle ABC$ by $(x, y) \rightarrow (x + 4, y + 2)$ then reflect it over the x-axis. Make a table of the coordinates showing $\triangle ABC \rightarrow \triangle A'B'C' \rightarrow \triangle A''B''C''$ and plot and label the image on the axes.