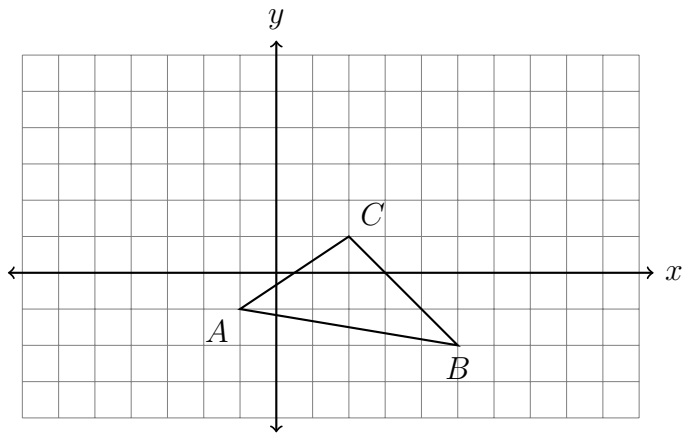
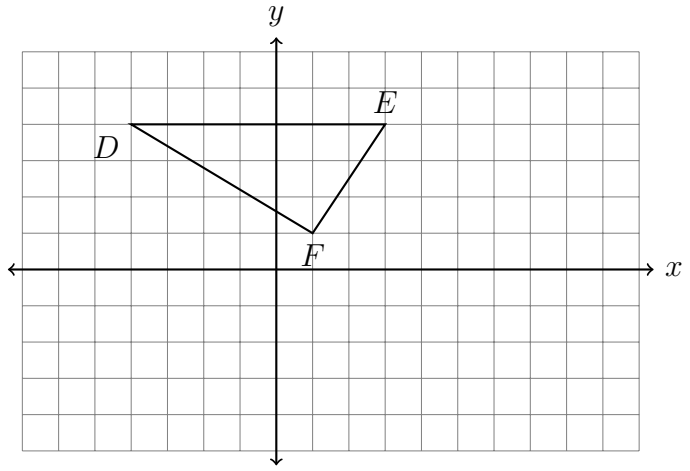
Unit 9: Congruence transformations Name:
24 February 2020

9.1b Do Now: Transformations and corresponding parts

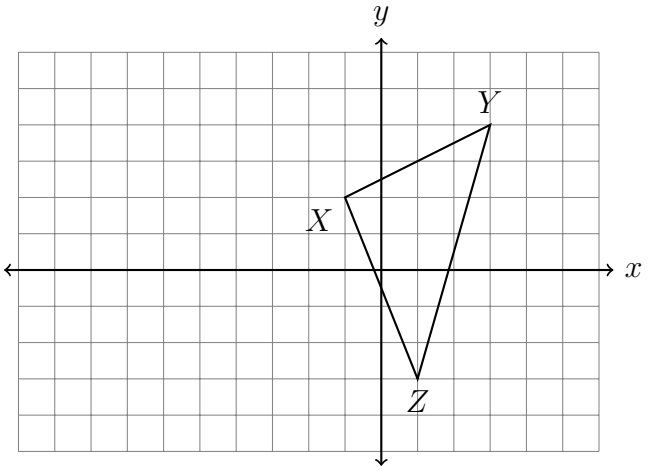
1. Slide $\triangle ABC$ to the right three and up four. Label the image $\triangle A'B'C'$.



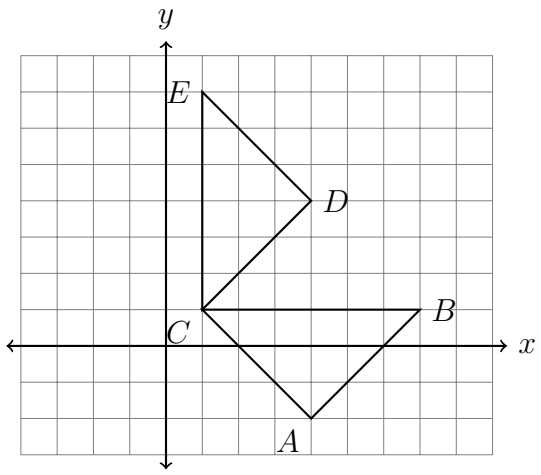
2. Translate $\triangle DEF$ by $(x, y) \to (x + 3, y - 5)$. Label the image $\triangle D'E'F'$.



3. Plot and label $\triangle XYZ$ with $X(-1, 2)$, $Y(3, 4)$, and $Z(1, -3)$. Then translate by $(x, y) \to (x - 6, y - 1)$, labeling the image $\triangle X'Y'Z'$.



4. What transformation maps $\triangle ABC$ onto $\triangle DEC$, shown below? Fully specify the transformation. Complete the table of mappings to corresponding objects.



(a) $A \rightarrow$ _____

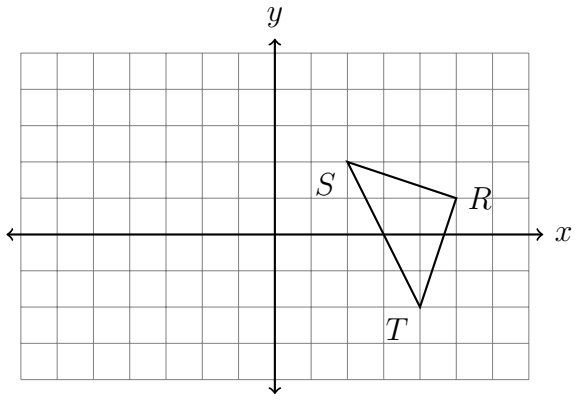
(b) $B \rightarrow$ _____

(c) $C \rightarrow$ _____

(d) $\angle ACB \cong$ _____

(e) _____ $\cong \overline{DE}$

5. Reflect $\triangle TRS$ across the y-axis, labeling the image $\triangle T'R'S'$. Check those properties that are maintained by reflection.



☐ Length

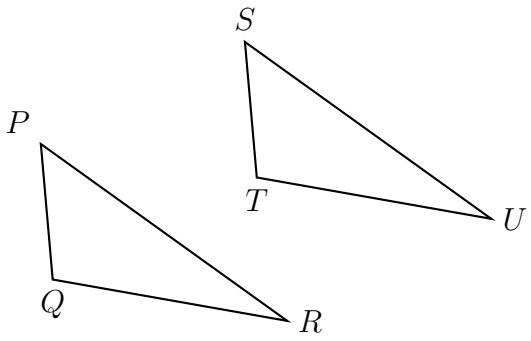
☐ Angle measures

☐ Orientation

☐ Parallel relationships

☐ Area

6. A translation maps triangle PQR onto triangle STU.



Write each corresponding object.

(a) $Q \rightarrow$ _____

(b) $\angle QRP \cong$ _____

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

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

7. Check those transformations that are rigid motions.

   ☐ Dilation
   ☐ Translation
   ☐ Reflection
   ☐ Rotation
   ☐ An isometry
   ☐ Horizontal stretch

8. A rigid motion maps $\triangle DEF$ onto $\triangle LMN$. Fill in the blanks.

   The following is given:

   $DE = 10$
   $m\angle E = 40°$
   $m\angle F = 110°$

   (a) $D \to$ _____

   (b) $LM =$ _____

   (c) $m\angle M =$ _____

   (d) $\overline{LM} \cong$ _____

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