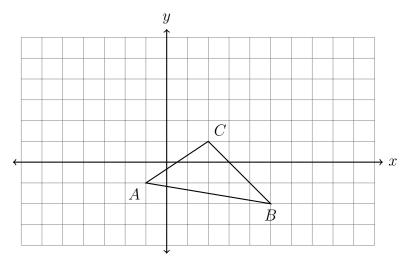
Name:

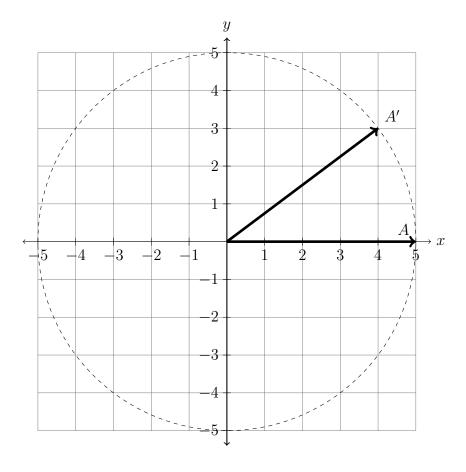
8.6 Homework: Mixed congruence transformations

CCSS.HSG.CO.A.5

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



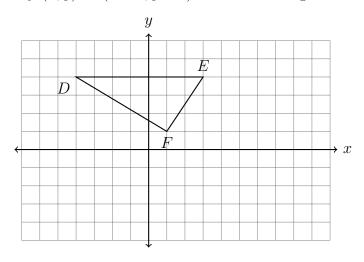
- 2. A vector from the origin \overrightarrow{OA} is shown rotated counterclockwise around O.
 - (a) Using a protractor, measure the angle of rotation
 - (b) Mark and label the point B(3, -4). Draw \overrightarrow{OB} .
 - (c) Find the measure of the combined angle, $m \angle A'OB$.



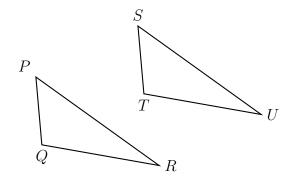
Unit 8: Congruence transformations

10 January 2023

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



4. A translation maps triangle PQR onto triangle STU.

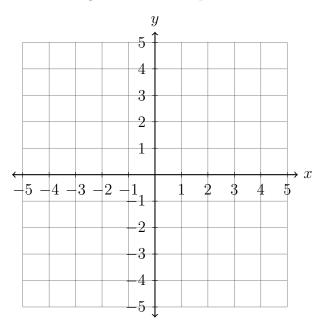


Write each corresponding object.

Name:

- (a) $Q \rightarrow \underline{\hspace{1cm}}$
- (b) $\angle QRP \cong \underline{\hspace{1cm}}$
- (c) $\underline{\hspace{1cm}} \cong \overline{ST}$
- (d) Justify $\triangle PQR \cong \triangle STU$. Use the words "rigid motion".
- 5. In the diagram below, $\triangle ABC$ with sides of 13, 15, and 16, is mapped onto $\triangle DEF$ after a clockwise rotation of 90° about point P.
 - (a) What is A mapped to? $A \rightarrow$
- (b) What corresponds to F?
- (c) Given DF = 3x + 1. Find x.

- 4
- 6. On the axes below, graph the point P(2,4) and its image, P', after a rotation of 90° counterclockwise around the origin. Label both points as a coordinate pair.



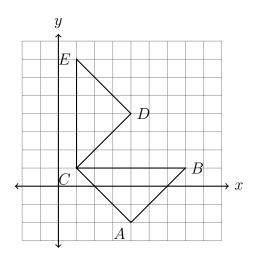
- 7. A transformation maps $\triangle ABC \rightarrow \triangle DEC$, shown below.
 - (a) Fully specify the transformation.
 - (b) Identify each corresponding object.

i.
$$A \rightarrow$$

ii.
$$B \rightarrow$$

iii.
$$C \rightarrow$$

v.
$$\underline{\hspace{1cm}} \cong \overline{DE}$$



8. Check those transformations that are rigid motions.

□ Dilation

☐ Rotation

☐ Translation

☐ An isometry

□ Reflection

☐ Horizontal stretch

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

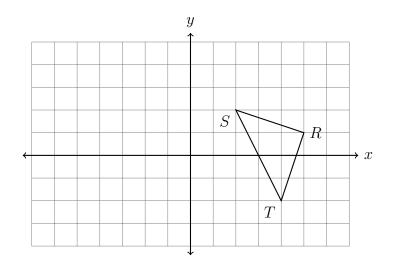
□ Length

 \square Angle measures

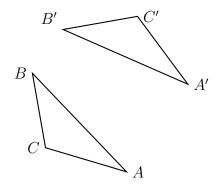
 \square Orientation

 $\hfill\Box$ Parallel relationships

□ Area



10. Draw the line of reflection that would map $\triangle ABC$ onto $\triangle A'B'C'$.



11. An isometry maps $\triangle JKL \rightarrow \triangle MNO$. $m \angle K = 40^{\circ}$ and $m \angle M = 100^{\circ}$. Find the measure of $\angle L$.

