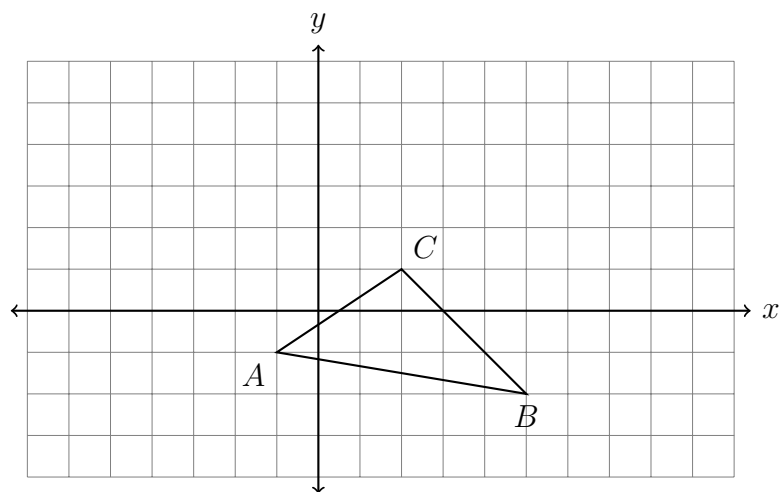


Name:

BECA / Dr. Huson / Geometry 5 Congruence Transformations

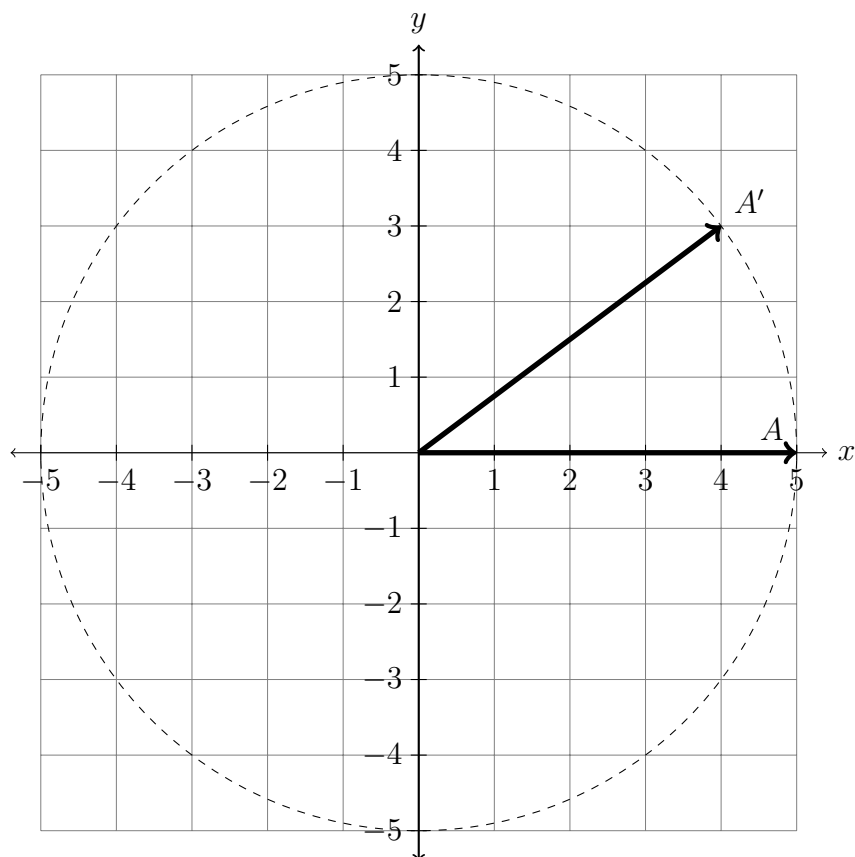
5.6 Classwork: Mixed congruence transformations**CCSS.HSG.CO.A.5**

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

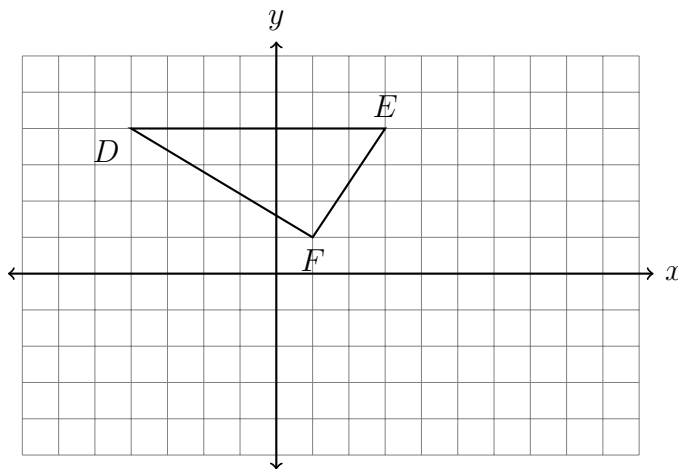


2. A vector from the origin \overrightarrow{OA} is shown rotated counterclockwise around O .

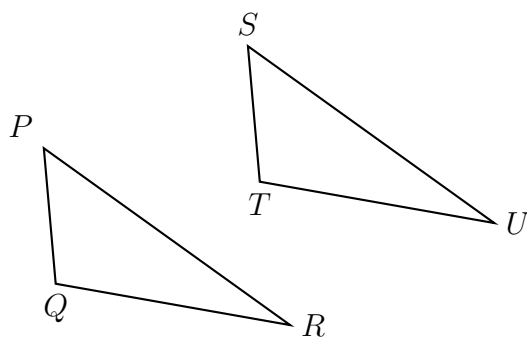
- Using a protractor, measure the angle of rotation
- Mark and label the point $B(3, -4)$. Draw \overrightarrow{OB} .
- Find the measure of the combined angle, $m\angle A'OB$.



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.

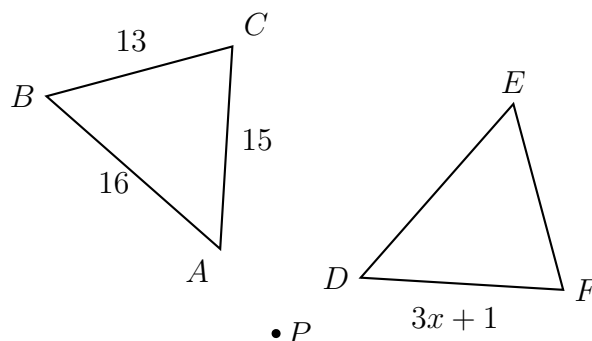
- (a) $Q \rightarrow$ _____
 (b) $\angle QRP \cong$ _____
 (c) _____ $\cong \overline{ST}$
 (d) Justify $\triangle PQR \cong \triangle STU$. Use the words “rigid motion”.

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 ? _____

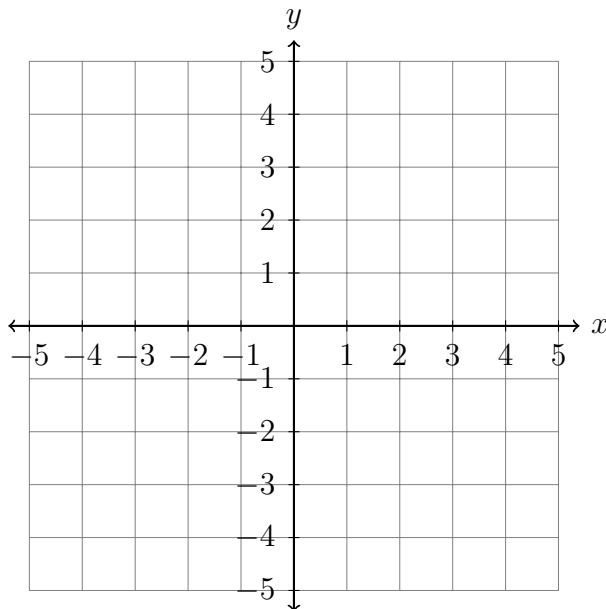
- (c) Given $DF = 3x + 1$. Find x .



Name:

BECA / Dr. Huson / Geometry 5 Congruence Transformations

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.

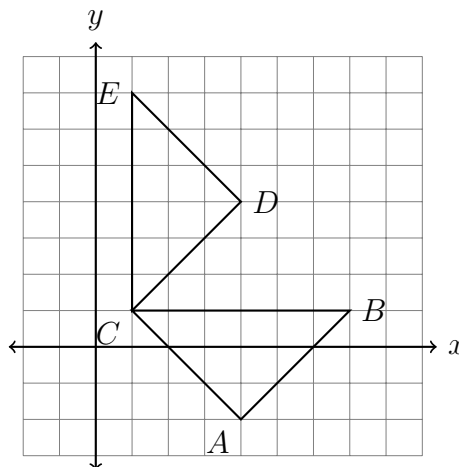


7. A transformation maps $\triangle ABC \rightarrow \triangle DEC$, shown below.

(a) Fully specify the transformation.

(b) Identify each corresponding object.

- i. $A \rightarrow$ _____
- ii. $B \rightarrow$ _____
- iii. $C \rightarrow$ _____
- iv. $\angle ACB \cong$ _____
- v. _____ $\cong \overline{DE}$



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.

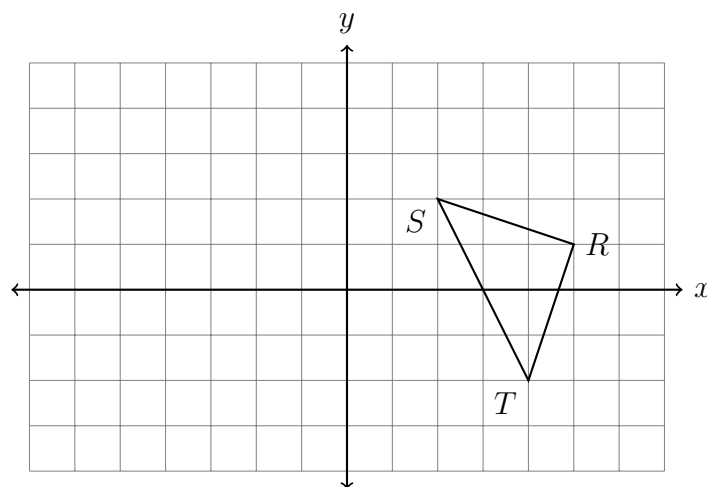
☐ Length

☐ Angle measures

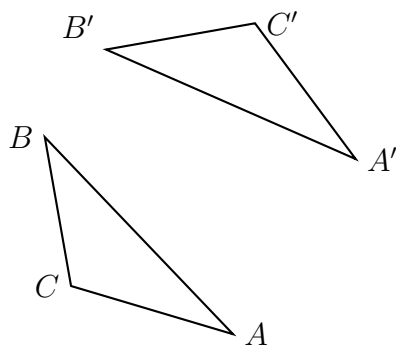
☐ Orientation

☐ 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 $\angle L$.

