

1. Write the following sequences of transformations as coordinate rules:

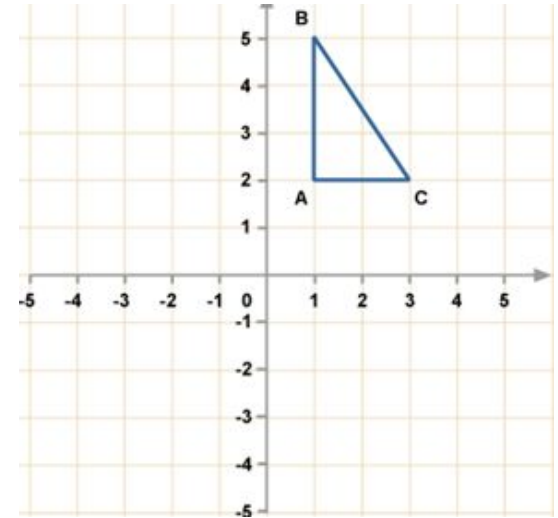
a. Translate 2 units left, 3 units up; then reflect over the x-axis.

$$(x,y) \rightarrow (\text{ }) \rightarrow (\text{ })$$

b. Rotate by 90 degrees CCW; then reflect over the line $y = x$.

$$(x,y) \rightarrow (\text{ }) \rightarrow (\text{ })$$

c. Using the sequence of transformations from part b, the image of triangle ABC will be in which quadrant?



Vocab:

d. A pair of angles that add up to 90.

e. A pair of angles that add up to 180.

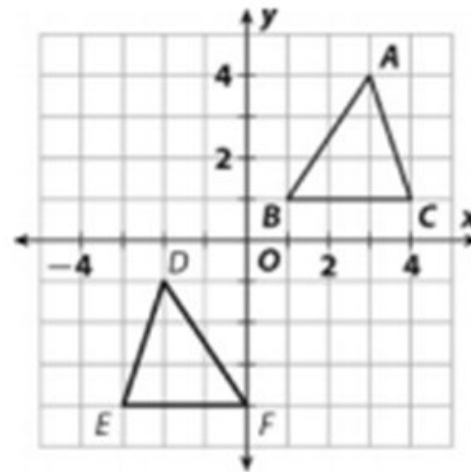
f. A pair of angles that are next to each other and add up to 180.

2. Consider the congruent triangles ABC and DFE:

a. Describe (in words) the sequence of rigid motions that would map ABC onto DFE

b. Write the coordinate rules for the sequence of transformations.

$$(x,y) \rightarrow (\text{ }) \rightarrow (\text{ })$$



Vocab

c. The “before” figure of a transformation.

d. The “after” figure of a transformation.

e. A line perpendicular to a segment that also goes through the midpoint of the segment.

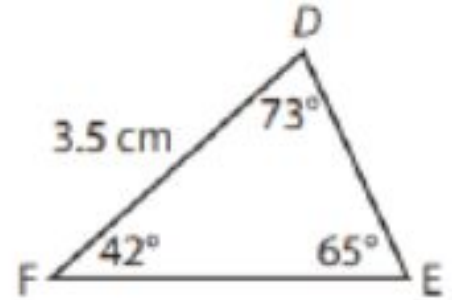
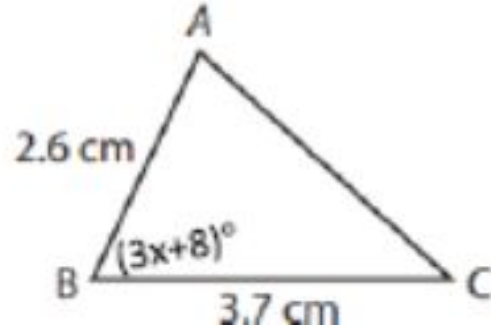
4. Consider the point $A(1,3)$. Find the image coordinates under the following sequence of transformations.

- a. First, translate 4 units left and 2 units up $A'($)
- b. Second, reflect over the x-axis. $A''($ $)$
- c. Third, rotate 90 degrees counterclockwise $A'''($ $)$
- d. Fourth, reflect over the line $y = -x$ $A''''($ $)$

Vocab

- e. A transformation that shifts a figure.
- f. A transformation that finds the mirror image of a figure.
- g. A transformation that spins a figure around a point.

5. If $\triangle ABC \cong \triangle DEF$, solve for x .



$x =$

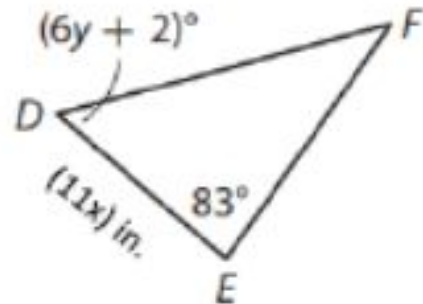
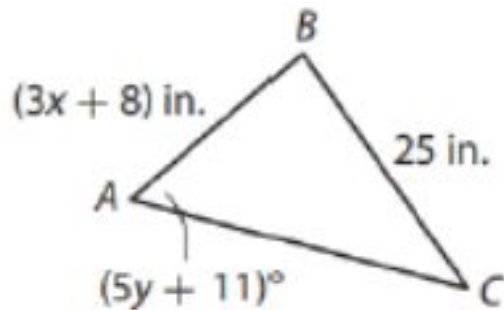
Vocab

a. A specific location in space.

b. A straight path that continues forever in both directions.

c. A flat surface that extends forever in all directions.

6. If $\triangle ABC \cong \triangle DEF$, solve for x and find DE .



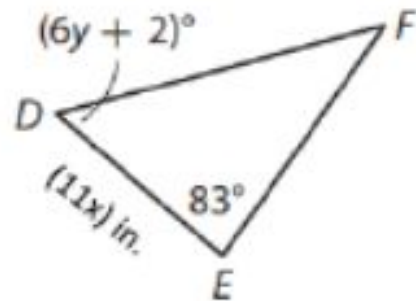
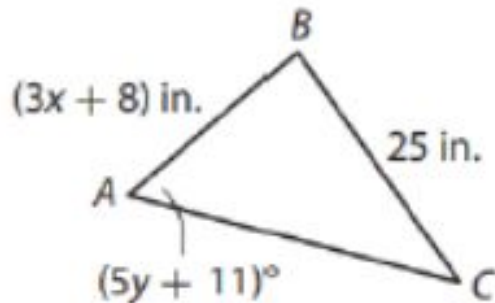
$x =$

$DE =$

Vocab

- A portion of a line consisting of two points and all points between them.
- A portion of a line that starts at a point (called the endpoint) and continues forever in one direction.
- This describes two figures that have the same shape and size (you can obtain one figure from the other using a sequence of rigid motions).

7. If $\triangle ABC \cong \triangle DEF$, solve for y and find $m\angle A$.



$y =$

$m\angle A =$

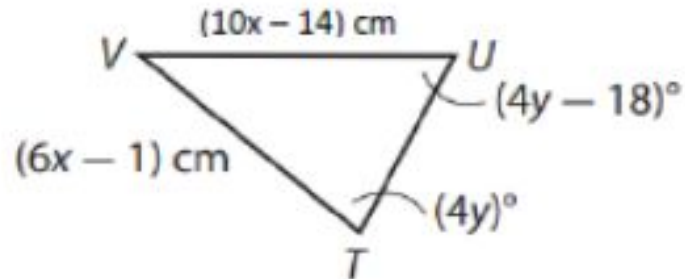
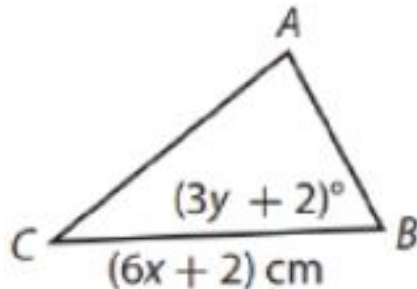
Vocab

a. An angle that is less than 90.

b. An angle that is greater than 90.

c. An angle that is equal to 90.

8. If $\triangle ABC \cong \triangle TUV$, solve for x and find UV .



$x =$

$UV =$

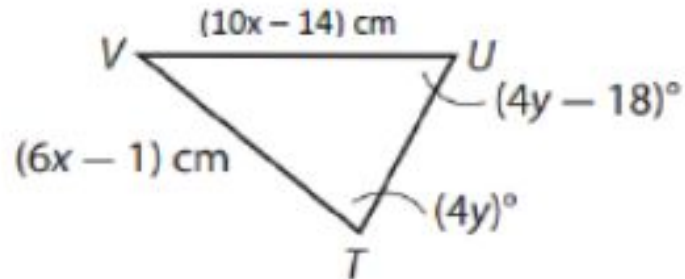
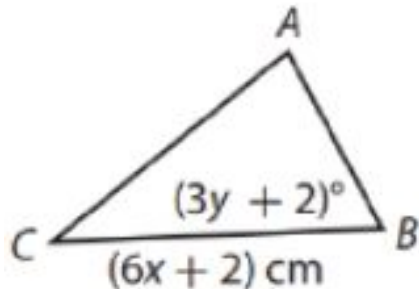
Vocab

a. A point that divides a segment into two segments that have the same length.

b. Something that divides a segment into two segments that have the same length.

c. A figure formed by two rays with the same endpoint.

9. If $\triangle ABC \cong \triangle TUV$, solve for y and find $m\angle B$.



$y =$

$m\angle B =$

Vocab

a. A quantity that has both magnitude and direction. It can be used to describe a translation.

b. Something that divides an angle into two angles that both have the same measure.