

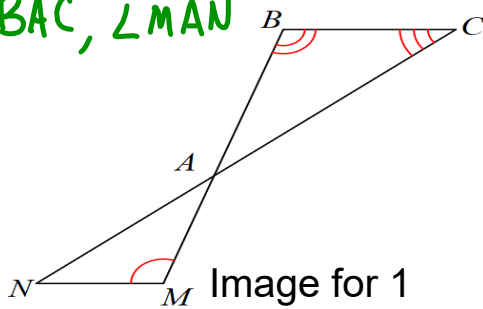
Warm-Up

1a. Name the marked angles.

$\angle AMN, \angle ABC, \angle BCA$

1b. Name the vertical angles.

$\angle BAC, \angle MAN$



Congruence

2. Write proportions of corresponding sides.

$$\frac{52}{24} = \frac{39}{18} = \frac{26}{12}$$

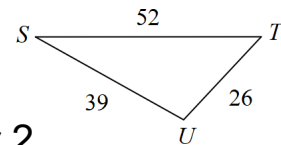
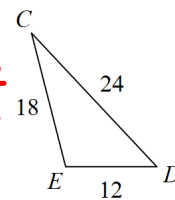


Image for 2

Today's Standard

CO.6 Use geometric descriptions of rigid motions to transform figures and to predict the effect of a given rigid motion on a given figure; given two figures, use the definition of congruence in terms of rigid motions to decide if they are congruent.

Vocabulary

Congruence

Congruence - have the same size and shape. Two figures are defined to be congruent if there is a sequence of rigid motions that maps one to the other.

Rigid motion - a transformation that preserves side lengths and angles

Congruence

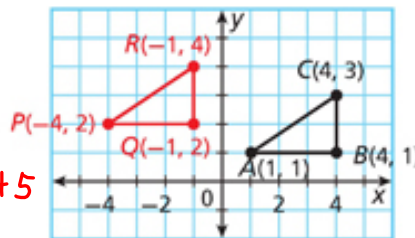
Rigid Motions create Congruent Figures

Determine whether the polygons with the given vertices are congruent.

A $A(1, 1), B(4, 1), C(4, 3)$

$P(-4, 2), Q(-1, 2), R(-1, 4)$

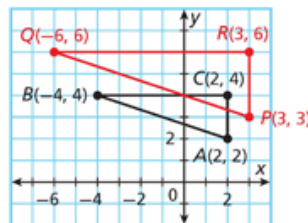
$\triangle ABC$ can be mapped onto $\triangle PQR$ by a translation left 5 and up 1. $(x, y) \rightarrow (x-5, y+1)$. A translation is a rigid motion. Rigid motions create congruent figures. Thus, $\triangle ABC \cong \triangle PQR$



B $A(2, 2), B(-4, 4), C(2, 4)$

$P(3, 3), Q(-6, 6), R(3, 6)$

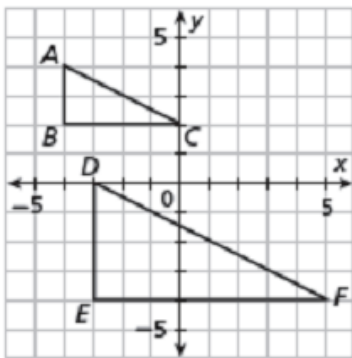
$\triangle ABC$ can be mapped onto $\triangle PQR$ by a dilation with scale factor of $\frac{3}{2}$. A dilation is not a rigid motion. Rigid motions create congruent figures. Thus, $\triangle ABC \not\cong \triangle PQR$



Congruence

Use the definition of congruence in terms of rigid motions to determine whether the two figures are congruent and explain your answer.

1.



$\triangle ABC$ can be mapped onto $\triangle DEF$ by a dilation. A dilation is not a rigid motion. Only rigid motions create congruent figures.

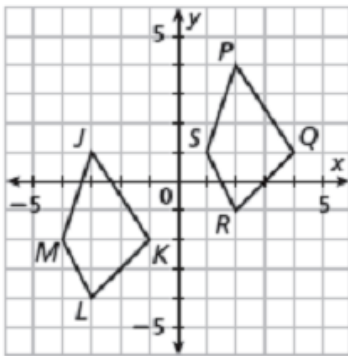
Thus, $\triangle ABC \not\cong \triangle DEF$.

1.

2.

Use the definition of congruence in terms of rigid motions Congruence to determine whether the two figures are congruent and explain your answer.

2.



You can map $JKLM$ to $PQRS$ by the translation of 5 right and 3 up.

$$(x,y) \rightarrow (x+5,y+3)$$

A translation is a rigid motion.

Rigid motions create congruent figures.

Thus, $JKLM \cong PQRS$

1.

2.

Congruence

Now you try

Problems 1-2