

Name _____
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Date _____
Geometry



Corresponding Parts of Congruent Triangles

1. Triangle XYZ is congruent to triangle LMN. Determine whether the following statements are true or false.

a) $\overline{XY} \cong \overline{LM}$

b) $\overline{YZ} \cong \overline{LN}$

c) $\overline{ZX} \cong \overline{NL}$

d) $\overline{XZ} \cong \overline{MN}$

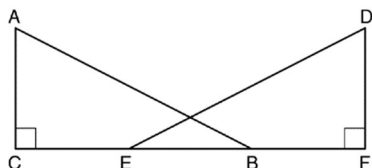
e) $\angle L \cong \angle Y$

f) $\angle M \cong \angle Z$

g) $\angle Z \cong \angle N$

h) $\angle M \cong \angle Y$

2. Right triangle DEF is the image of right triangle ABC after a sequence of rigid motions. Determine whether the following statements are true or false.



a) $\overline{AC} \cong \overline{EF}$

b) $\overline{AB} \cong \overline{DE}$

c) $\overline{CA} \cong \overline{FD}$

d) $\overline{BC} \cong \overline{DF}$

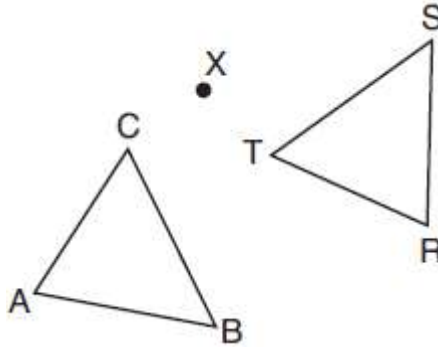
e) $\angle D \cong \angle B$

f) $\angle C \cong \angle F$

g) $\angle E \cong \angle B$

h) $\angle E \cong \angle C$

3. After a counterclockwise rotation about point X , scalene triangle ABC maps onto $\triangle RST$, as shown in the diagram below.



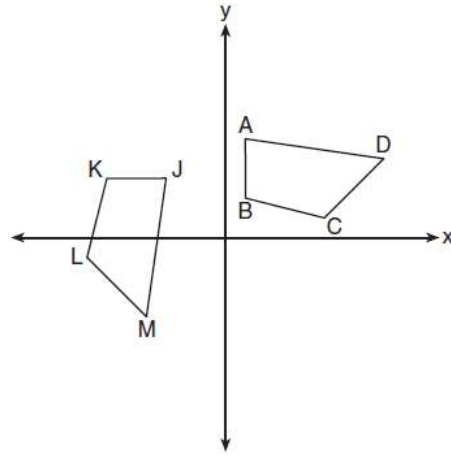
Which statement must be true?

- 1) $\angle A \cong \angle R$
- 2) $\angle A \cong \angle S$
- 3) $\overline{CB} \cong \overline{TR}$
- 4) $\overline{CA} \cong \overline{TS}$

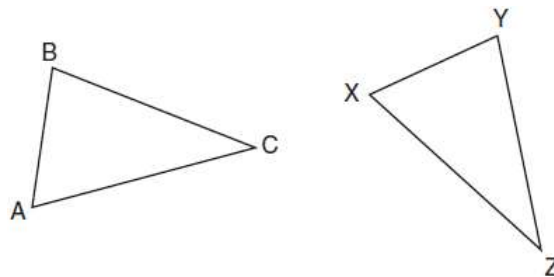
4. In the diagram below, a sequence of rigid motions maps $ABCD$ onto $JKLM$.

Which of the following statements must be true?

- 1) $\angle L \cong \angle B$
- 2) $\angle A \cong \angle J$
- 3) $\overline{JK} \cong \overline{AC}$
- 4) $\overline{JM} \cong \overline{AB}$



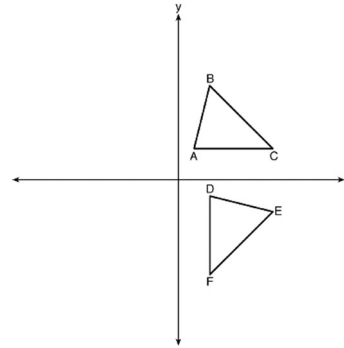
5. In the diagram below of $\triangle ABC$ and $\triangle XYZ$, a sequence of rigid motions maps $\angle A$ onto $\angle X$, $\angle C$ onto $\angle Z$, and \overline{AC} onto \overline{XZ} .



Determine and state whether $\overline{BC} \cong \overline{YZ}$. Explain why.

Determine and state whether $\angle A \cong \angle Y$. Explain why.

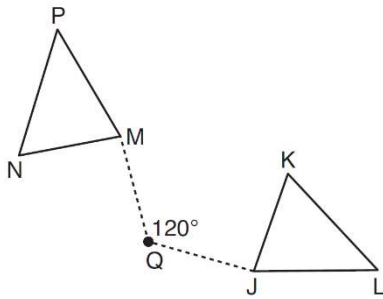
6. The image of $\triangle ABC$ after a rotation of 90° clockwise about the origin is $\triangle DEF$, as shown below.



Which statement is true?

- 1) $\overline{BC} \cong \overline{DE}$
- 2) $\overline{AB} \cong \overline{DF}$
- 3) $\angle C \cong \angle E$
- 4) $\angle A \cong \angle D$

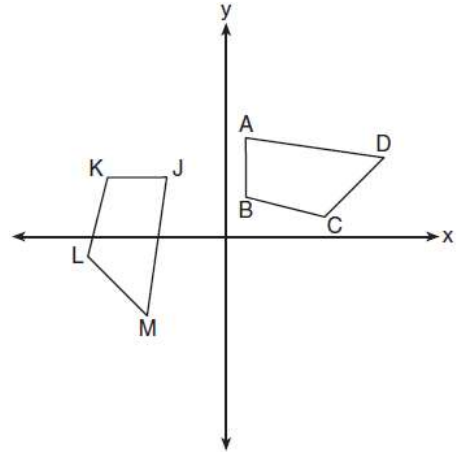
7. Triangle MNP is the image of triangle JKL after a 120° counterclockwise rotation about point Q . If the measure of angle L is 47° and the measure of angle N is 57° , determine the measure of angle M . Explain how you arrived at your answer.



8. In the diagram below, a sequence of rigid motions maps $ABCD$ onto $JKLM$.

If $m\angle A = 82^\circ$, $m\angle B = 104^\circ$, and $m\angle L = 121^\circ$, the measure of $\angle M$ is

- 1) 53°
- 2) 82°
- 3) 104°
- 4) 121°



9. In the diagram below, $\triangle ABC$ with sides 13, 15, and 16, is mapped onto $\triangle DEF$ after a clockwise rotation of 90° about point P .

If $DE = 2x - 1$, what is the value of x ?

