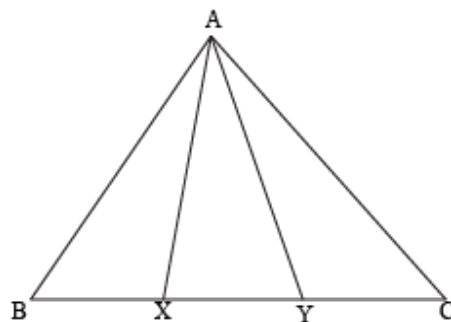


**1. Triangle Congruence and Reasoning**

$\triangle ABC$  is an isosceles triangle, with longest side BC.



a. Which of the following must be true? (Check all that apply)

- $\overline{AB} \cong \overline{AC}$
- $\angle B \cong \angle C$
- $\overline{BC} \cong \overline{AC}$
- $\angle BAC \cong \angle CAB$
- $BC < AC$
- $m\angle BAC > m\angle CBA$

b. If  $\triangle AXY$  is also isosceles and if  $\overline{XB}$  is congruent to  $\overline{YC}$ , are any triangles congruent?

- Yes, triangles are congruent
- No, no triangles are congruent

If yes, write a congruence statement and tell which congruence postulate/theorem you would use. If no, determine what other information would be needed to show two triangles are congruent.

Rubric:

|           | 1  | 2  | 3   | 4       |
|-----------|--|--|---|---------|
| <b>1a</b> | Three or more incorrect (included extra AND/OR excluded) | Two incorrect (included extra AND/OR excluded)   | One incorrect (included one extra OR excluded one)  | Correct |
| <b>1b</b> | Student checked no.                                      | Student checked yes, but the congruence statement AND the Congruence Postulate was incorrect | Student checked yes, but either the congruence statement OR the congruence postulate was incorrect. | Correct |

**2. Transformation and Congruence**

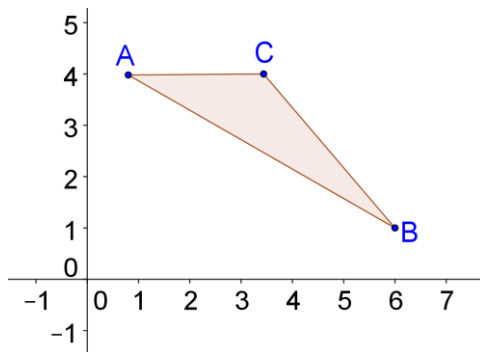
a. A triangle is dilated by 2, translated five units to the right, and then compressed by 2. Which of the following is true?

- A. The transformations are rigid because the final triangle is congruent to the original triangle
- B. The transformations are non-rigid because the final triangle is not congruent to the original triangle
- C. The transformations are rigid because the triangle stays the same size throughout
- D. The transformations are non-rigid because the triangle does not stay the same size throughout

b. The following triangle goes through the transformations as discussed in part a. After the dilation by 2, the coordinates of  $A'$  are (8, 2). What are the coordinates of  $A''$  and  $A'''$ ?

$A''$  \_\_\_\_\_

$A'''$  \_\_\_\_\_



Rubric:

|           | 1   | 2  | 3  | 4                                 |
|-----------|---|--|--|-----------------------------------|
| <b>2a</b> | Answer C  | Answer A   | Answer B                                 | Answer D                          |
| <b>2b</b> | Both $A''$ and $A'''$ are incorrect, and neither are written as coordinates OR no answer is given | Both $A''$ and $A'''$ are incorrect, but both are written as coordinates | $A''$ is correct but $A'''$ is incorrect | Both $A''$ and $A'''$ are correct |