Isometry: Translation Question 18

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September 3, 2019

To start, the distances must be calculated for the side lengths of each image.

$$AB \to \sqrt{(-9+7)^2+(0-4)^2} = \sqrt{32} \tag{1}$$

$$AC \to \sqrt{(-3+7)^2+(4-4)^2} = 4 \tag{2}$$

$$A'B' \to \sqrt{(-7+9)^2+(3-0)^2} = \sqrt{13} \tag{3}$$

$$A'C' \to \sqrt{(-5+9)^2+(0-0)^2} = 4 \tag{4}$$

$$\tag{5}$$

The side lengths are not enough to prove that the shapes are congruent because clearly the transformation's side length is different from the first image. Therefore, it is necessary to use the distance between the pre-point and the translated point to determine congruency.