LESSON MAKER PRO

Move and Measure

Track what changes when a figure moves.

GRADE 8 · MT.8.G.1

MT.8.G.1 "Verify experimentally the properties of rotations, reflections, and translations and understand that these are rigid transformations, lines are taken to lines, line segments to line segments of the same length..."

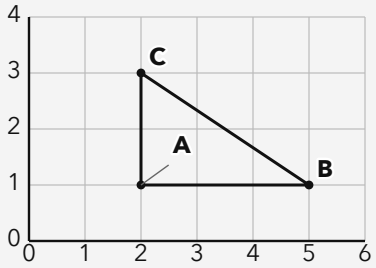
NAME _____ DATE _____

RIGID MOVES

A translation, reflection, or rotation keeps lengths and angle measures the same. Parallel lines stay parallel. On a coordinate grid, a 90° counterclockwise turn about the origin sends (x,y) to (-y,x).

WORKED EXAMPLE

Translate triangle ABC left 1 unit and up 2 units. Find B' and the length of A'B'.



1. Move B left 1 and up 2: B'=(4,3).
2. AB is 5-2=3 units long.
3. A translation keeps lengths the same, so A'B'=3 units.

Answer: B'=(4,3); A'B'=3 units.

PRACTICE 4 problems

1 Translate P(-2,7) right 6 units and down 4 units. Find P'.

ANSWER _____

2 Reflect Q(-8,-3) across the y-axis. Find Q'.

ANSWER _____

3 Rotate R(6,-4) 90° counterclockwise about the origin. Find R'.

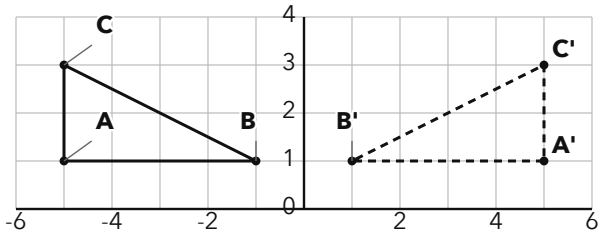
ANSWER _____

4 A 12 cm segment is reflected. How long is its image?

ANSWER _____

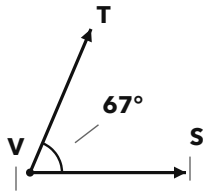
APPLY IT Show your work

1 A Billings skate club mirrors its sticker design across the y-axis, as shown. Find AB and A'B'. What do the lengths show?



ANSWER _____

2 For a poster at a Salish Kootenai College open house, a student rotates the corner shown 90°. What is the corner's angle after the rotation?



ANSWER _____

CHALLENGE One step up

A(-4,-2) and B(2,-2) move to A'(1,2) and B'(7,2). Could this be a translation? Give the move and compare AB with A'B'.

WORK SPACE AND ANSWER

ANSWER KEY

Move and Measure

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Translate P(-2,7) right 6 units and down 4 units. Find P'.	**P'=(4,3)**
2	Reflect Q(-8,-3) across the y-axis. Find Q'.	**Q'=(8,-3)**
3	Rotate R(6,-4) 90° counterclockwise about the origin. Find R'.	**R'=(4,6)**
4	A 12 cm segment is reflected. How long is its image?	**12 cm**

PART 2 · APPLY IT

1. **AB=4 units and A'B'=4 units. The reflection keeps the segment's length.** Count the horizontal units between each pair of endpoints. Both segments are 4 units long.
2. **67°** A rotation changes the corner's position, not its angle measure.

CHALLENGE

Yes. Both points move right 5 units and up 4 units. AB=6 units and A'B'=6 units.

Accept coordinate answers without parentheses if both values are in the correct order. In the challenge, students must check that both points make the same move.