

Geometry Unit 7: Congruence transformations

Bronx Early College Academy

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17 January 2023 - 3 February 2023

7.1 Translation

17 January

Learning Target: I can slide a figure

HSG.CO.A.5 Congruence transformations

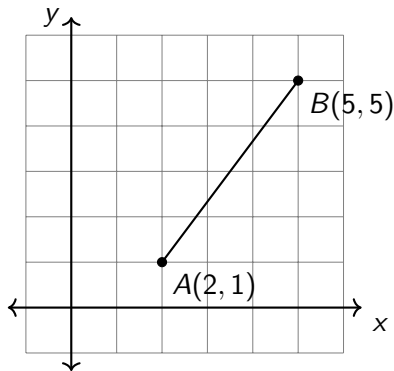
7.1 Tuesday 17 January

Do Now

1. Review your Jumprope grades
2. Find the rise and run of the line segment \overline{AB} .

Lesson: Translation, classwork practice

Homework: Complete the classwork practice



Translation

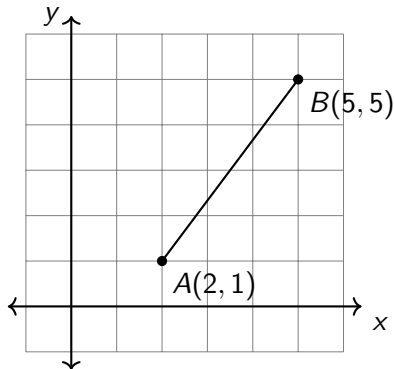
Rise is plus 4, run is plus 3.

$$A(2, 1) \rightarrow B(5, 5)$$

Translate Move a figure horizontally and vertically (slide)

Vector A quantity with both magnitude and direction

$$\overrightarrow{AB} = (3, 4)$$



Example: Translate point A up two units and right four units

Notation for translation:

$$\overrightarrow{AA'} = (+4, +2)$$

$$A(1, 2) \rightarrow A'(1 + 4, 2 + 2)$$

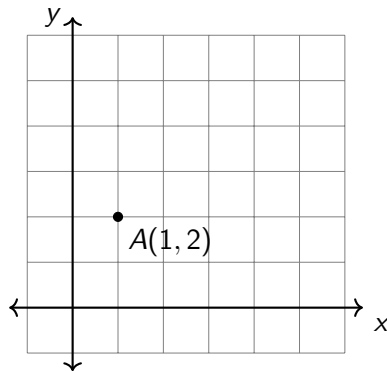
$$T_{+4, +2}$$

Pre-image The original figure

Image The result of a transformation

→ We say the A is *mapped* to A' .

Prime The prime symbol is used to denote the image (A')



Translate $\triangle ABC$ right one unit and up three units $T_{+1,+3}$

$$(x, y) \rightarrow (x + 1, y + 3)$$

$$A(1, 1) \rightarrow$$

$$B(1, 2) \rightarrow$$

$$C(4, 1) \rightarrow$$

Rigid motion Move without changing the shape or size (isometry)

Congruent Figures with the same size and shape

Invariant Does not change (lengths, angles, area, perimeter)

