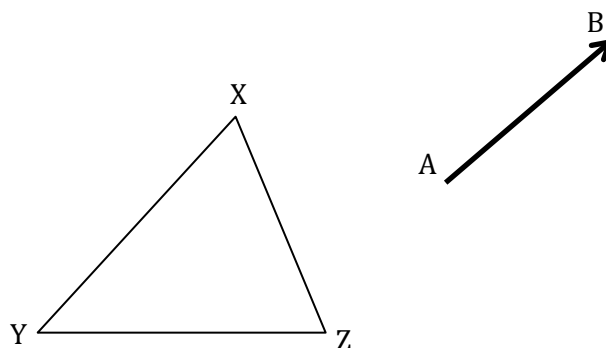


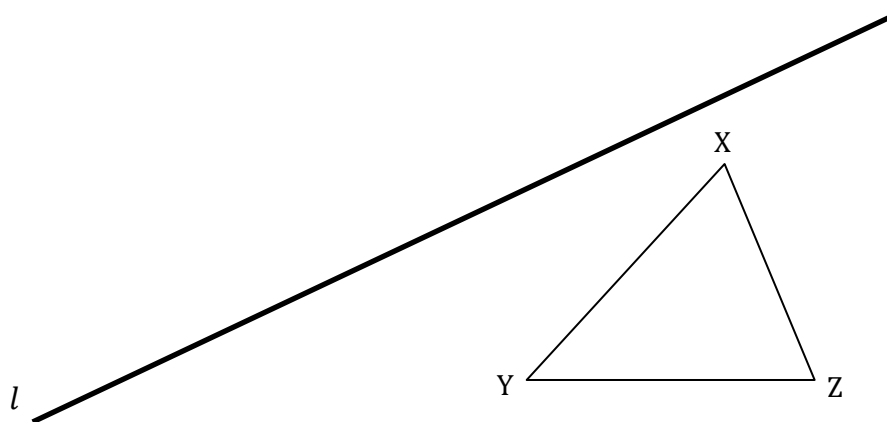
Name _____

Date _____

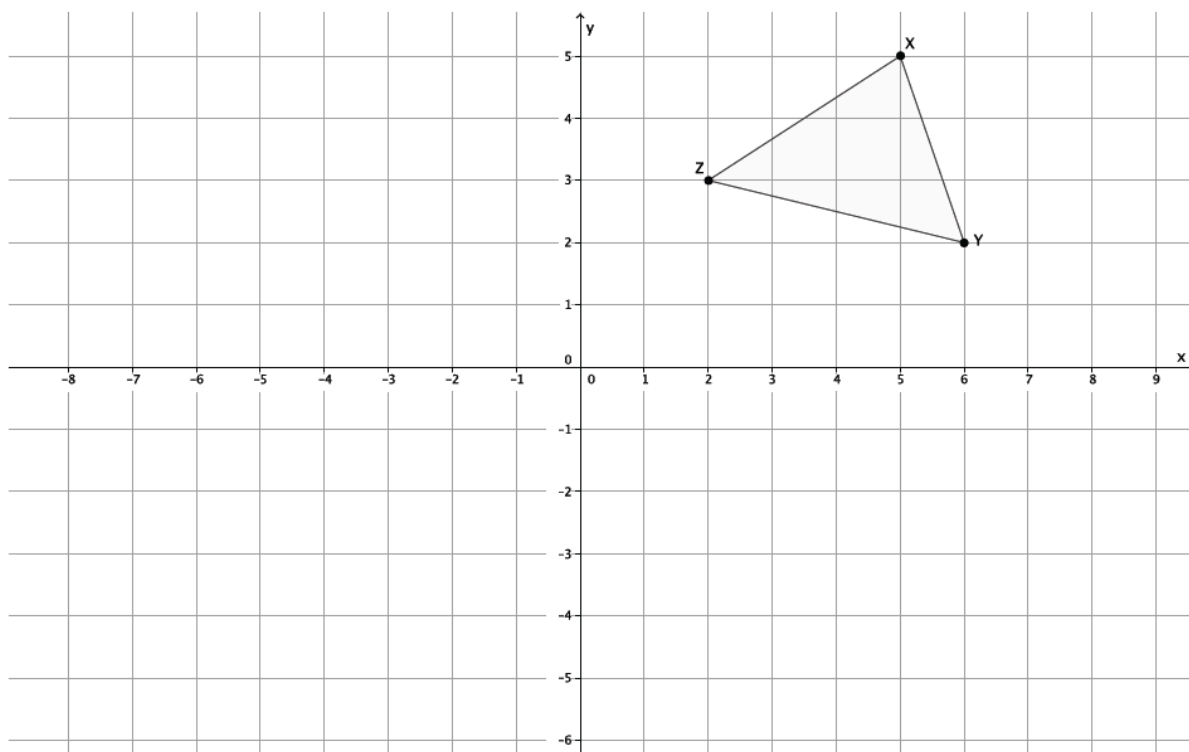
- 1.
- a. Translate $\triangle XYZ$ along $\overrightarrow{AB}$. Label the image of the triangle with X' , Y' , and Z' .



- b. Reflect $\triangle XYZ$ across the line of reflection, l . Label the image of the triangle with X' , Y' , and Z' .

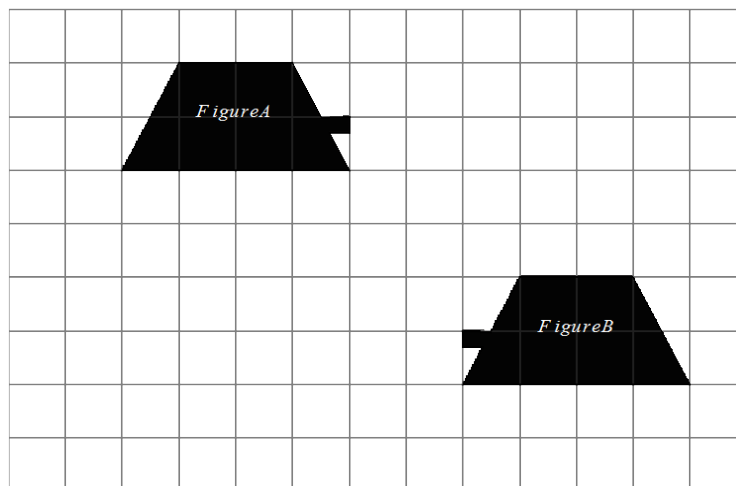


- c. Rotate $\triangle XYZ$ around the point $(1,0)$, clockwise 90° . Label the image of the triangle with X' , Y' , and Z' .



2. Use the picture below to answer the questions.

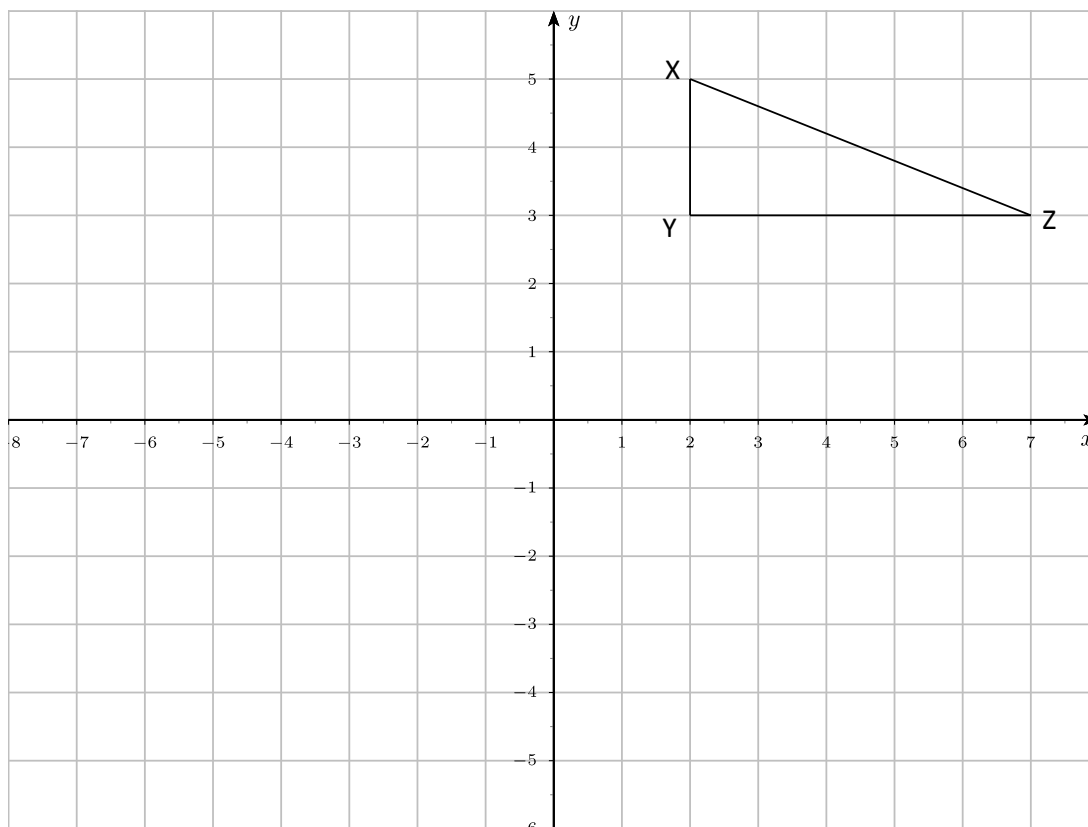
Figure A has been transformed to Figure B.



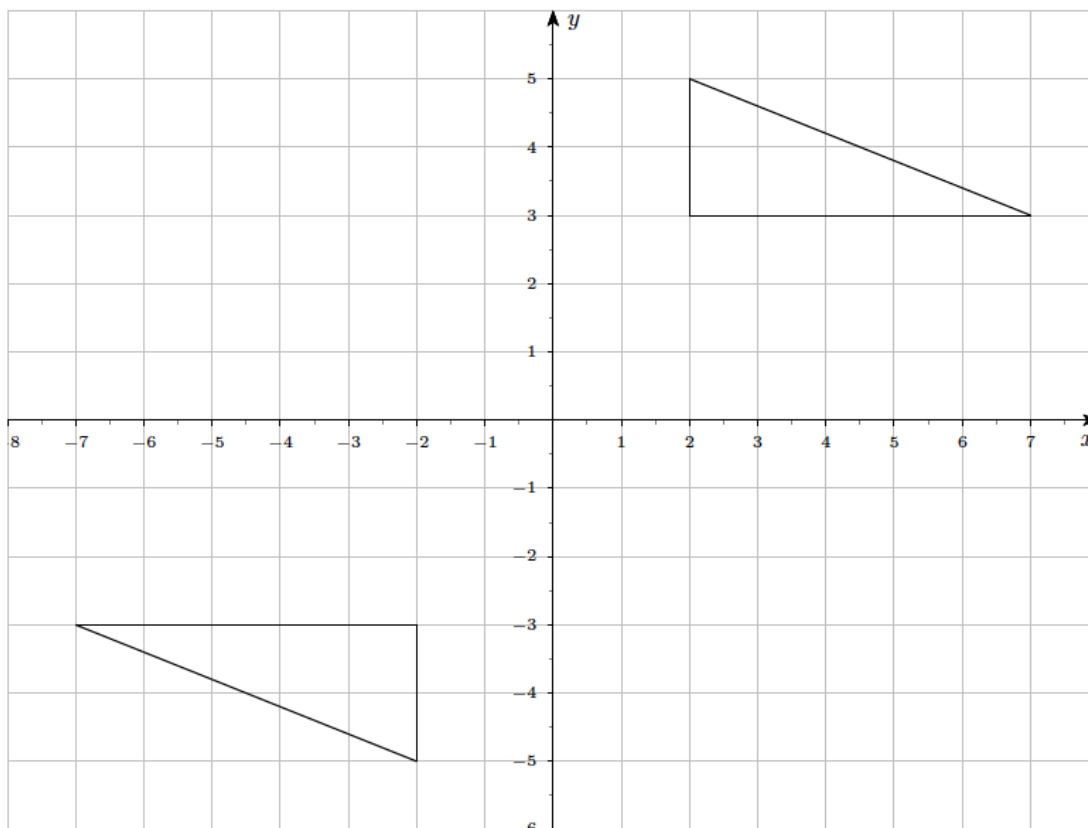
- a. Can Figure A be mapped onto Figure B using only translation? Explain. Use drawings, as needed, in your explanation.
- b. Can Figure A be mapped onto Figure B using only reflection? Explain. Use drawings, as needed, in your explanation.

3. Use the graphs below to answer parts (a) and (b).

- a. Reflect $\triangle XYZ$ over the horizontal line (parallel to the x -axis) through point $(0,1)$. Label the reflected image with $X'Y'Z'$.



- b. One triangle in the diagram below can be mapped onto the other using two reflections. Identify the lines of reflection that would map one onto the other. Can you map one triangle onto the other using just one basic rigid motion? If so, explain.



A Progression Toward Mastery

Assessment Task Item	STEP 1 Missing or incorrect answer and little evidence of reasoning or application of mathematics to solve the problem.	STEP 2 Missing or incorrect answer but evidence of some reasoning or application of mathematics to solve the problem.	STEP 3 A correct answer with some evidence of reasoning or application of mathematics to solve the problem, <u>or</u> an incorrect answer with substantial evidence of solid reasoning or application of mathematics to solve the problem.	STEP 4 A correct answer supported by substantial evidence of solid reasoning or application of mathematics to solve the problem.
1	a 8.G.1	Student was unable to respond to the question or left item blank. Student may have enlarged or shrunk image. Student may have reflected or rotated image.	Student did translate along a vector. Student may have used a different vector than what was given. Student may have shortened or lengthened given vector. Student did not label image or may have labeled image incorrectly.	Student translated correctly along vector. Student did not label image or may have labeled image incorrectly.
	b 8.G.1	Student was unable to respond to the question or left item blank. Student may have enlarged or shrunk image. Student may have translated or rotated the image.	Student did reflect across line. Student may have reflected across a different line than what was given. Student did not label image or may have labeled image incorrectly. The orientation of the image may be incorrect.	Student reflected correctly across line. Student did not label image or may have labeled image incorrectly.
	c 8.G.1	Student was unable to respond to the question or left item blank. Student may have translated the triangle to the correct quadrant. Student may have reflected the triangle to the correct quadrant.	Student did rotate about the point (1,0). Student may have rotated the triangle counter-clockwise 90° . Student may have rotated more or less than 90° . Student did not label image or may have labeled image incorrectly.	Student did rotate about the point (1,0) clockwise 90° . Student did not label image or may have labeled image incorrectly.

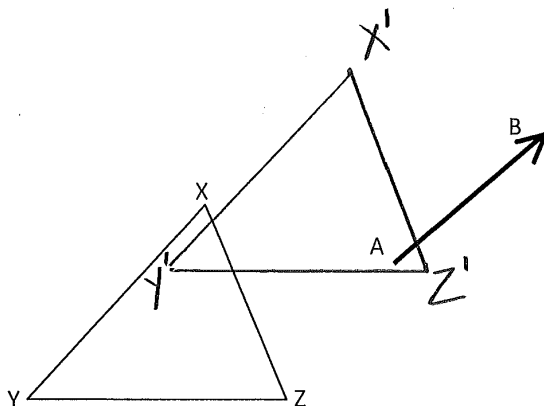
2	a 8.G.1	Student answered with yes or no only. Student was unable to give any explanation (pictorially or written).	Student answered with yes or no. Student showed some reasoning (pictorially or written) to solve the problem. Student showed no application of mathematics to solve the problem.	Student answered correctly with no. Student used a pictorial explanation only as evidence of reasoning. Some evidence of mathematical reasoning in explanation. Student did not use mathematical vocabulary in explanation.	Student answered correctly with no <u>AND</u> student used mathematical vocabulary in explanation. Student may have used pictorial explanation to enhance mathematical explanation.
	b 8.G.1	Student answered with yes or no only. Student was unable to give any explanation (pictorially or written).	Student answered with yes or no. Student showed some reasoning (pictorially or written) to solve the problem. Student showed no application of mathematics to solve the problem.	Student answered correctly with no. Student used a pictorial explanation only as evidence of reasoning. Some evidence of mathematical reasoning in explanation. Student did not use mathematical vocabulary in explanation.	Student answered correctly with no <u>AND</u> student used mathematical vocabulary in explanation. Student may have used pictorial explanation to enhance mathematical explanation.
3	a 8.G.1	Student was unable to respond to the question or left item blank. Student showed no reasoning or application of mathematics to solve the problem.	Student reflected triangle across any line other than the line $y = 1$. The orientation of the triangle may or may not be correct. Student may or may not have labeled the triangle correctly.	Student reflected triangle across the line $y = 1$. The orientation of the triangle is correct. Student may or may not have labeled the triangle correctly.	Student reflected triangle across the line $y = 1$ <u>AND</u> the orientation of the triangle is correct. <u>AND</u> Student labeled the triangle correctly.
	b 8.G.1	Student was unable to respond to the questions or left items blank. Student answered with yes or no only. Student may or may not have identified the lines of reflection. No evidence of mathematical reasoning used in written explanation.	Student answered with yes or no. Student may or may not have identified the lines of reflection. Student identified a rotation as the rigid motion. Student may or may not have identified the degree of rotation or the center of rotation. Some evidence mathematical reasoning used in written explanation.	Student answered correctly with yes. Student identified the lines of reflection. Student identified a rotation as the rigid motion. Student identified the degree of rotation. Student may or may not have identified the center of rotation. Some evidence mathematical reasoning used in written explanation.	Student answered correctly with yes. Student correctly identified the lines of reflection as $y = 0$, then $x = 0$ <u>OR</u> as $x = 0$, then $y = 0$ <u>AND</u> student identified a rotation as the rigid motion <u>AND</u> student identified the degree of rotation as 180 <u>AND</u> student identified the center of rotation as the origin <u>AND</u> substantial evidence mathematical reasoning used in written explanation.

Name _____

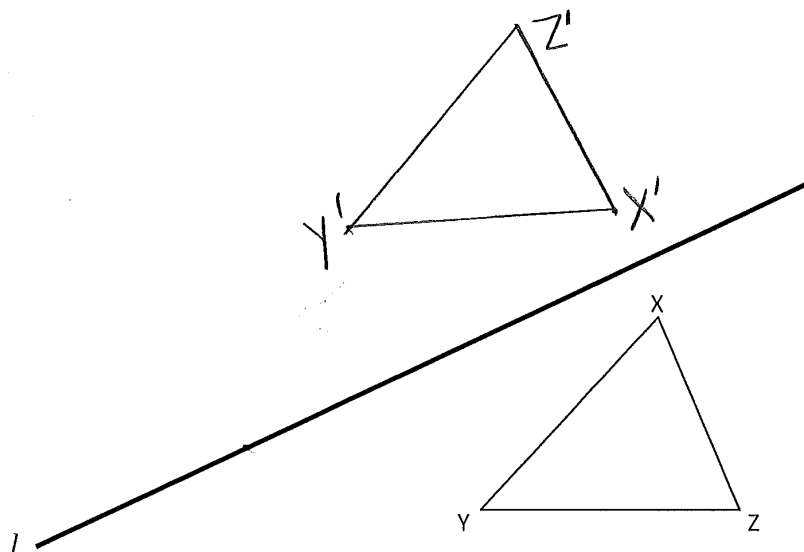
Date _____

1.

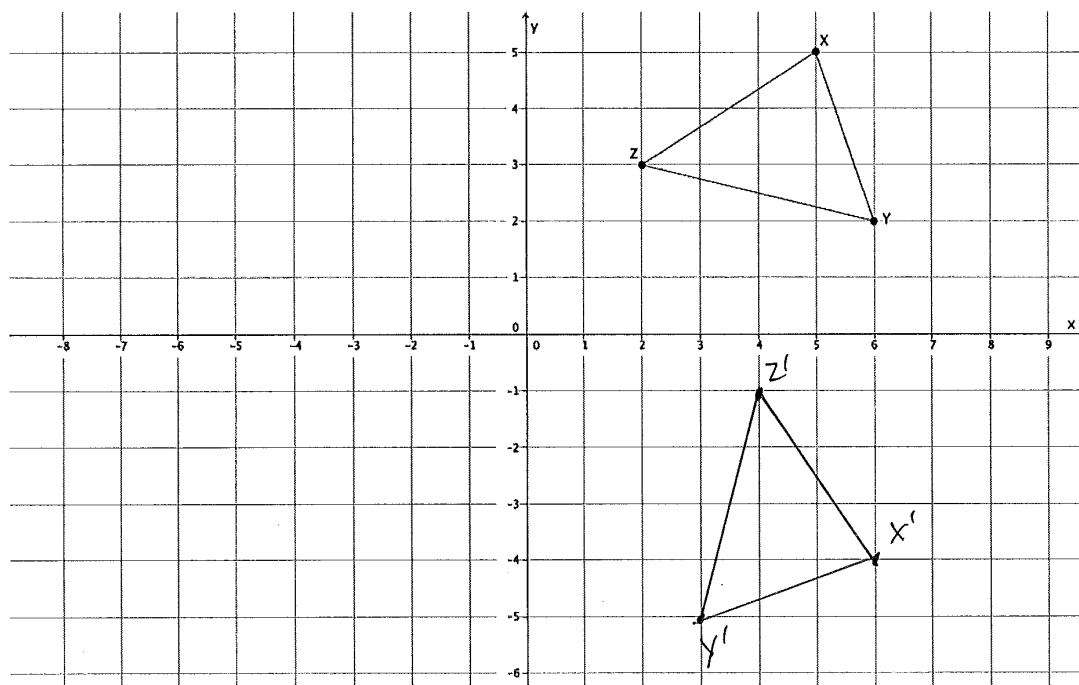
- a. Translate $\triangle XYZ$ along $\overrightarrow{AB}$. Label the image of the triangle with X' , Y' , and Z' .



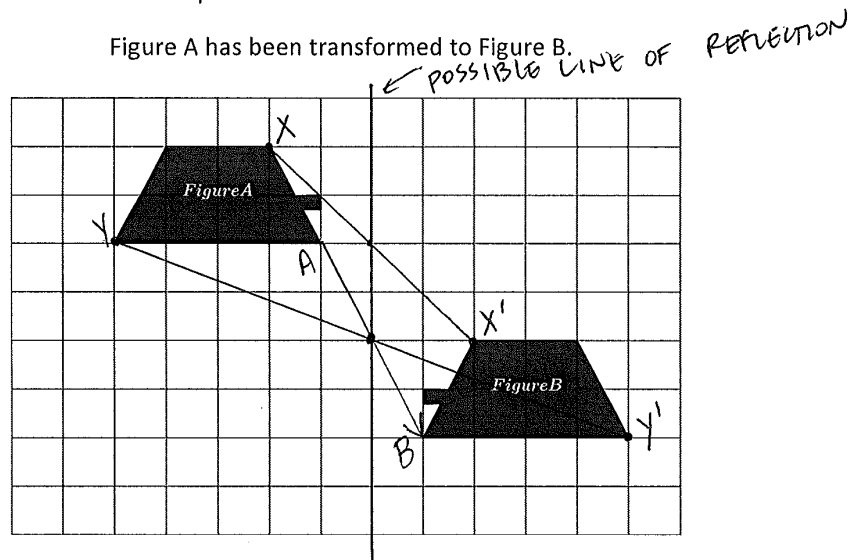
- b. Reflect $\triangle XYZ$ across the line of reflection, l . Label the image of the triangle with X' , Y' , and Z' .



- c. Rotate $\triangle XYZ$ around the point $(1,0)$, clockwise, 90° . Label the image of the triangle with X' , Y' , and Z' .



2. Use the picture below to answer the questions.



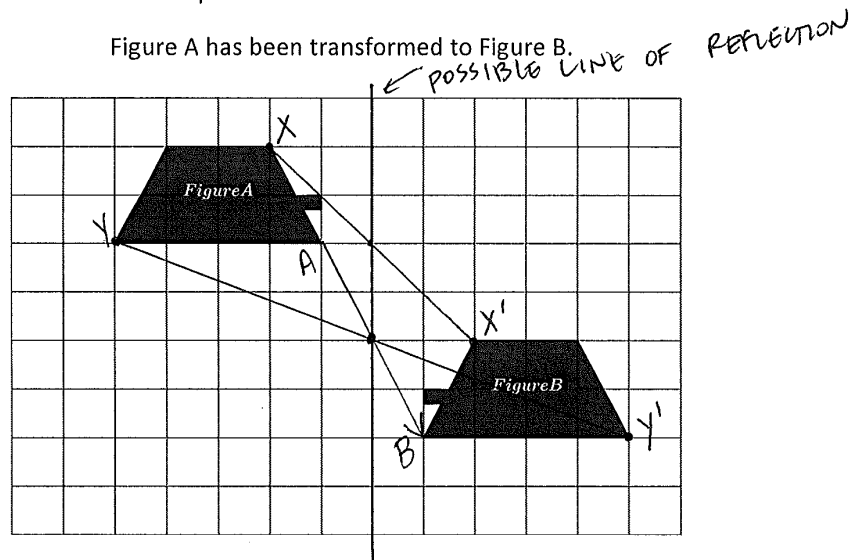
- a. Can Figure A be mapped onto Figure B using only translation? Explain. Use drawings, as needed, in your explanation.

NO, IF I TRANSLATE ALONG VECTOR $\vec{AB}$ I CAN GET THE LOWER POINT OF FIGURE A TO MAP ONTO THE LOWER LEFT POINT OF FIGURE B (ONE PAIR OF CORRESPONDING POINTS) BUT NO OTHER POINTS OF THE FIGURES COINCIDE.

- b. Can Figure A be mapped onto Figure B using only reflection? Explain. Use drawings, as needed, in your explanation.

NO, WHEN I CONNECT A POINT OF FIGURE A TO ITS IMAGE ON FIGURE B, THE LINE OF REFLECTION SHOULD BISECT THE SEGMENT. WHEN I CONNECT MIDPOINTS OF $\overline{XX'}$ & $\overline{YY'}$ I GET A POSSIBLE LINE OF REFLECTION, BUT WHEN I CHECK, FIGURE A DOES NOT MAP ONTO FIGURE B.

2. Use the picture below to answer the questions.



- a. Can Figure A be mapped onto Figure B using only translation? Explain. Use drawings, as needed, in your explanation.

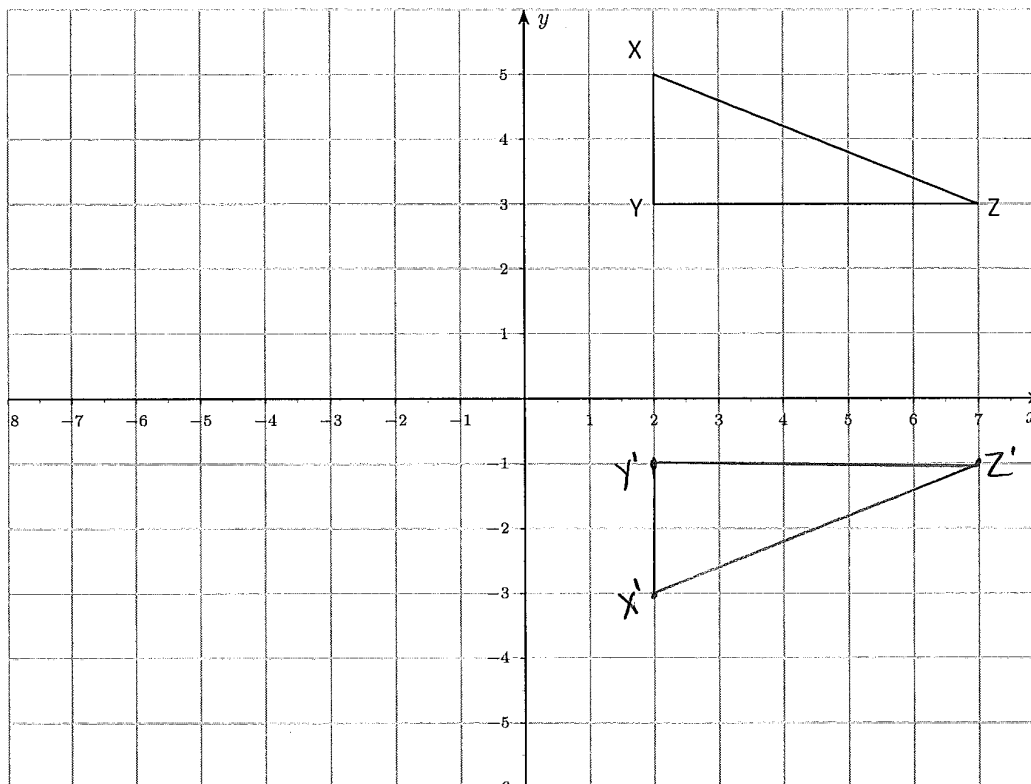
NO, IF I TRANSLATE ALONG VECTOR $\overrightarrow{AB}$ I CAN GET THE LOWER POINT OF FIGURE A TO MAP ONTO THE LOWER LEFT POINT OF FIGURE B (ONE PAIR OF CORRESPONDING POINTS) BUT NO OTHER POINTS OF THE FIGURES COINCIDE.

- b. Can Figure A be mapped onto Figure B using only reflection? Explain. Use drawings, as needed, in your explanation.

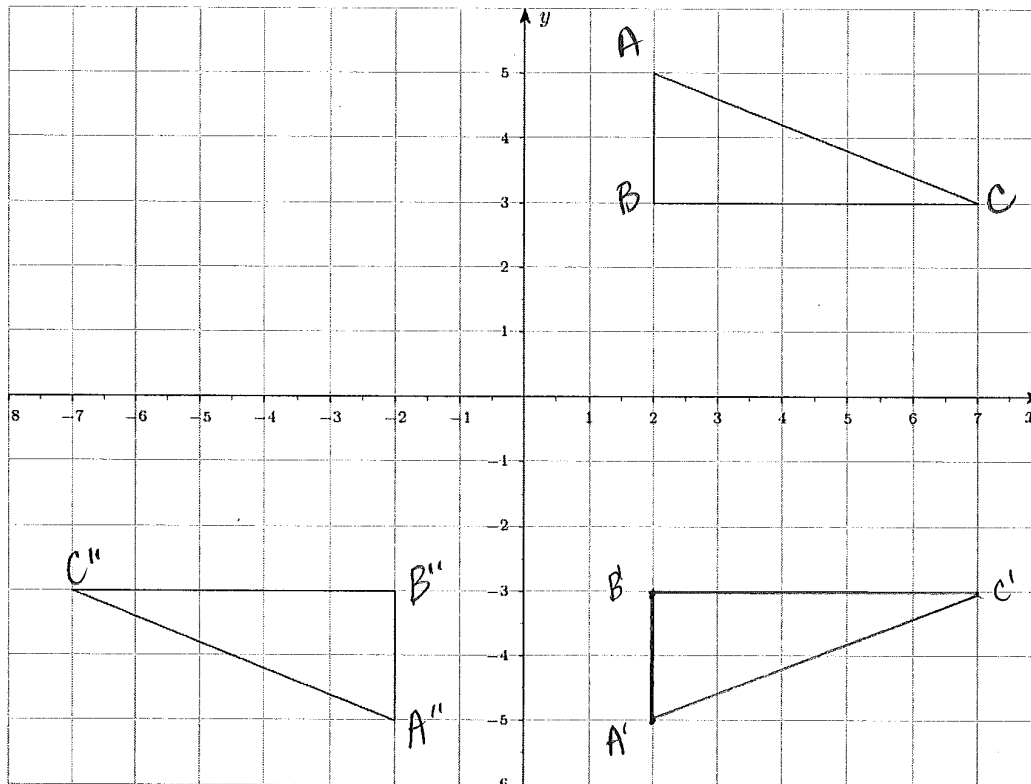
NO, WHEN I CONNECT A POINT OF FIGURE A TO ITS IMAGE ON FIGURE B, THE LINE OF REFLECTION SHOULD BISECT THE SEGMENT. WHEN I CONNECT MIDPOINTS OF $\overline{XX'}$ & $\overline{YY'}$ I GET A POSSIBLE LINE OF REFLECTION, BUT WHEN I CHECK, FIGURE A DOES NOT MAP ONTO FIGURE B.

3. Use the graphs below to answer parts (a) and (b).

- a. Reflect $\triangle XYZ$ over the line $y = 1$. Label the reflected image of X as X' , Y as Y' , and Z as Z' .



- b. One triangle in the diagram below can be mapped onto the other using two reflections. Identify the lines of reflection that would map one onto the other. Can you map one triangle onto the other using just one basic rigid motion? If so, explain.



A REFLECTION ACROSS THE X-AXIS MAPS $\triangle ABC$ TO $\triangle A'B'C'$ AND A REFLECTION ACROSS THE Y-AXIS MAPS $\triangle A'B'C'$ TO $\triangle A''B''C''$.

SINCE $AB \parallel A''B''$, $BC \parallel B''C''$, AND $AC \parallel A''C''$ AND THE LENGTHS $AB = A''B''$, $BC = B''C''$, $AC = A''C''$, THEN A 180° ROTATION ABOUT THE ORIGIN WILL MAP $\triangle ABC$ TO $\triangle A''B''C''$.