ALBERTA DISTANCE LEARNING CENTRE
Mathematics 30-3 Online
MAT3793
Unit A Chapter 2 Assignment

Student's Questions and Comments

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Student ID:

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Please use the pre-printed label for this course and Assignment

Name

Address

City/Town **Province** **Postal Code**

Apply Assignment Label Here

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Assigned to

_____

Marked by

_____

Date received

_____

Summary

	Marks Earned	Total Marks	Percent
Lesson 1		**22**	
Lesson 2		**15**	
Lesson 3		**22**	
Lesson 4		**22**	
Lesson 5		**16**	

Teacher's Comments:

_____

Teacher's Signature

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Unit A Chapter 2 Assignment

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Mathematics 30-3 Online

Unit A Chapter 2 Assignment

Geometry – Transformations

Submission Instructions

You will submit your assignments online by uploading them to your course in Moodle. Once you log in to your course, you will find more detailed submission instructions provided by your teacher.

Go to this website to learn how to log in to Moodle:
http://quick.adlc.ca/login

If you have further questions about submitting your work, please contact your teacher.

Mathematics 30-3 Online

Unit A Chapter 2 Assignment

Our Pledge to You:

Enrolling in this course is another step toward an Alberta High School Diploma. Everyone at Alberta Distance Learning Centre is committed to helping students achieve their educational goals. We welcome your contact in person or by phone, fax, e-mail, voice mail, or postal mail.

Advice:

Your achievement in this course is determined by your success in the assessments of each unit. Your responses to assignments indicate your understanding of outcomes established by Alberta Education.

- Before responding to the assigned questions, read all relevant directions for the Assignment and instruction in the course materials, including the appropriate Guide for Learning and any other resources provided.
- When you encounter difficulties, re-read the directions for the Assignment and review the relevant instruction in the Guide for Learning.
- If you require further clarification, contact your Alberta Distance Learning Centre teacher for assistance.

Notice:

You have one opportunity to submit each Assignment.

- Only under exceptional circumstances will your ADLC teacher re-assess your work. Therefore, apply significant effort to each Assignment.
- If your final exam mark is vastly different from your Quiz marks, your teacher may apply discretion in determining your course mark.

Format

You are encouraged to **handwrite** your written work.

If you type your work, be sure to follow these guidelines:

- Include your full name and student file number as a document header.
- Double-space your final copy.
- Staple your printed work to this Assignment.

ADLC Plagiarism Policy (ADLC Administrative Policy 60–1)

Plagiarism is the practice of representing someone else's work or ideas as one's own. It is an academically dishonest practice and is detrimental to a student's knowledge and skill development. ADLC takes a progressive approach to plagiarism to educate and correct the behaviour.

All incidents will be documented and are subject to the consequences outlined below:

First Incident	Second Incident	Third Incident
The student is given zero scores on any work suspected of being plagiarized and given the opportunity to resubmit original work.	The student is given zero scores on any work suspected of being plagiarized and is not given the opportunity to resubmit original work. A letter is sent by the principal to parents and school facilitators outlining this administrative practice and the consequences.	The student is removed from the course in which plagiarized work is suspected and notifications are put into the ADLC Student Information System, barring future registration to the course in question. A withdrawal letter is sent by the principal to parents and school facilitators.

Important

While removal from a course is limited to the course in which the third incident has occurred, the preceding steps can occur across different courses. A student who has been found plagiarizing in Course A and held to the First Incident consequences who then plagiarizes in Course B will move to the Second Incident consequences.

Any further occurrences after the Third Incident in any other courses will result in immediate removal from that course. Ongoing occurrences may result in removal from all courses and barring of registration with ADLC.

Sharing of ADLC Work (ADLC Administrative Policy 60–4)

Plagiarism is the practice of representing someone else's work or ideas as one's own. It is a dishonest practice and is damaging to a student's knowledge & skill development. Plagiarism is addressed in ADLC Administrative Policy 60-01.

The sharing of school work, especially after having been marked by ADLC, to students for the purposes of submitting plagiarized work (either paraphrasing or directly copying student work) is dishonest, and this sharing goes against the Alberta School Act's expectation of students to respect school rules and co-operate with how schools offer education to their students.

ADLC prefers to take a progressive approach to the sharing of work with other students, in order to educate and correct the behaviour.

If a student is currently enrolled in any ADLC course and found to be sharing school work, whether from their current course or another, to others, the following will happen:

First Incidence	Second Incidence
The student is informed that their work has been submitted as plagiarized work by another student; a warning is provided that further submissions of such work, from any course, will be grounds for removal from the current course(s).	The student is removed from all active ADLC courses.

If the student is not currently enrolled in any ADLC course and found to be sharing school work with others, they are informed that their work has been submitted as plagiarized work by another student and, as such, further registrations in any ADLC course will not be permitted. The incident will be recorded on the student's file.

Such actions do not limit ADLC to pursue other remedies (actions), either criminal or civil, for the distribution of its copyrighted materials.

Lesson 1 Assignment

Dilations

Work slowly and carefully. If you are having difficulty, go back and review the appropriate *Lesson*.

For full marks, show all calculations, steps, and/or explain your answers.

Total: 22 marks.

*Select the **best** answer for multiple-choice questions 1 and 2, choose the letter of your answer and write it on the line provided.*

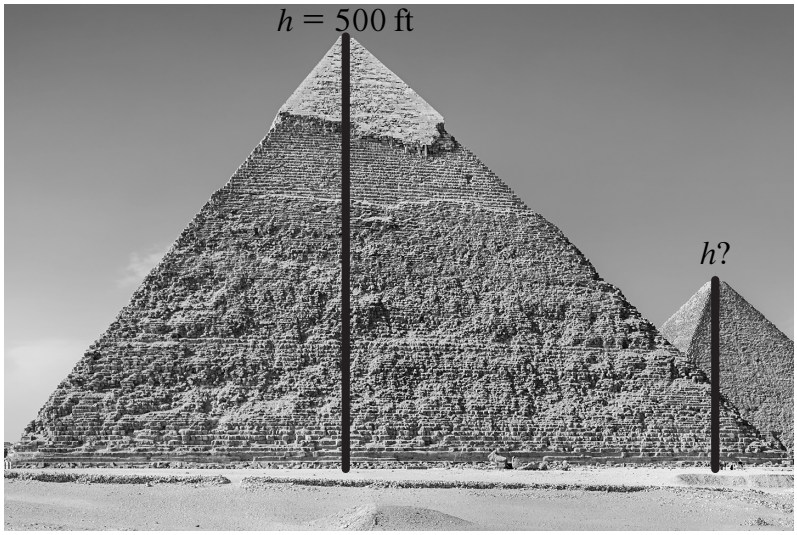
(1) _____ 1. Which scale factor will produce an enlargement when a dilation is applied to a shape or object?

A. 0.1
B. 0
C. 1
D. 10

(1) _____ 2. Which scale factor will produce a reduction when a dilation is applied to a shape or object?

A. 0.1
B. 0
C. 1
D. 10

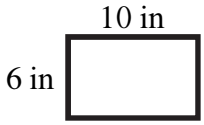
3. A scale factor of 0.4 was applied to the large pyramed, which has a height of 500 ft.



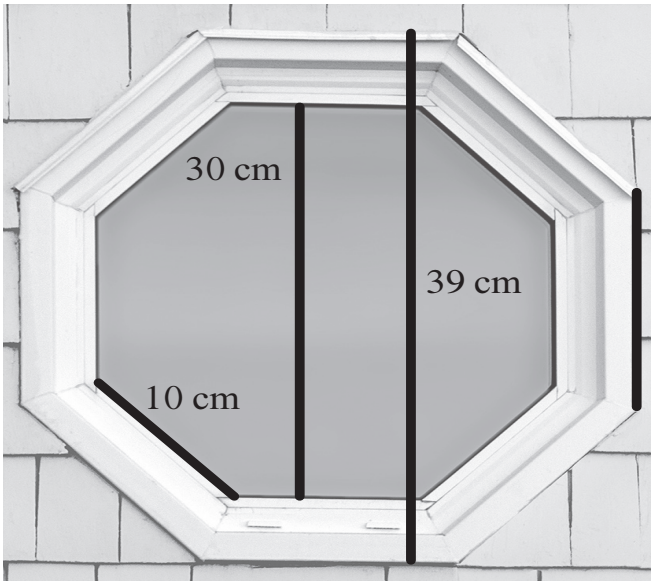
(1) a. What is the height of the small pyramid?

(1) b. What type of dialation was performed?

(2) 4. A rectangle has a length of 10 inches and a width of 6 inches. If the small rectangle is dilated by a factor of 3.5, find the dimensions of the large rectangle.



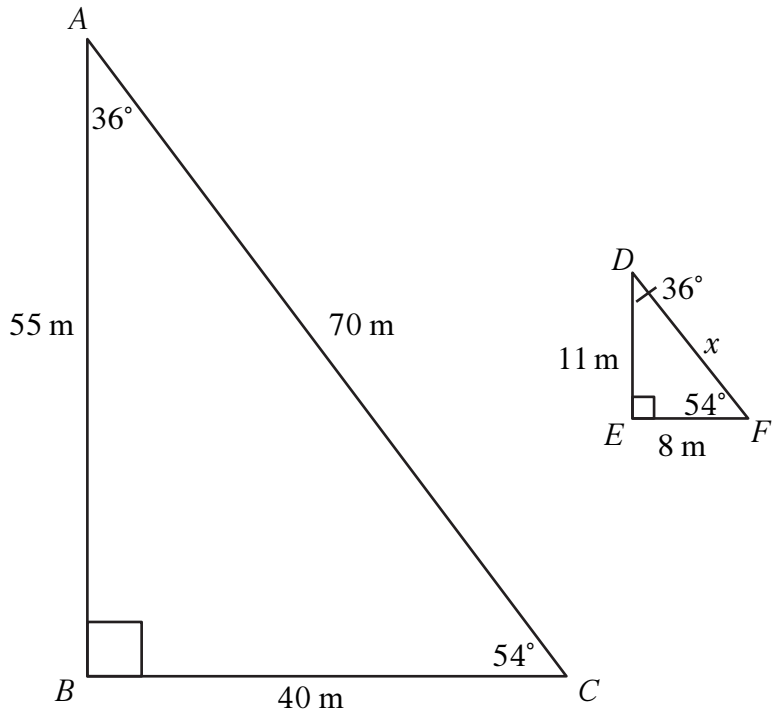
5. The inside of the window frame in the picture below has the shape of a regular octagon. The white outside frame is similar to the window that it surrounds.



(1) a. Find the scale factor that was applied to the window to obtain the outer dimensions of the white frame.

(1) b. What type of dilation was performed?

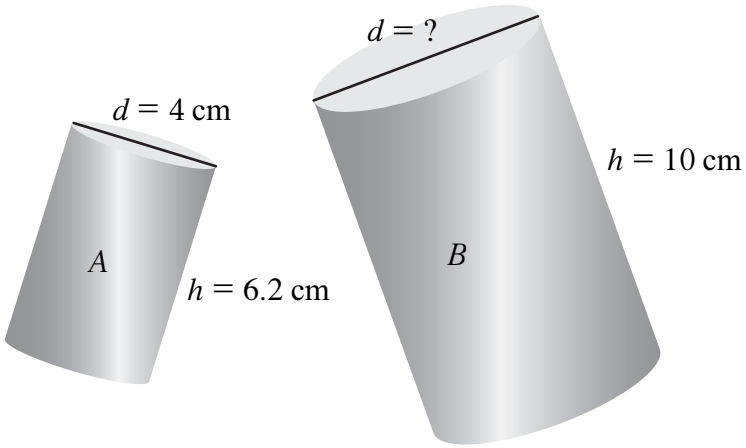
6. Use the two triangles below to answer the following.



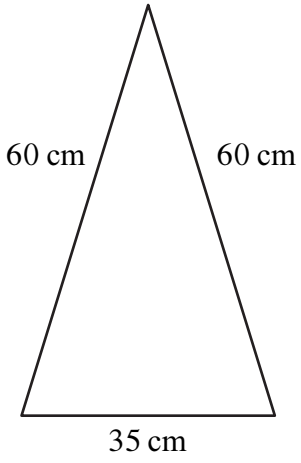
(3) a. Show that the two triangles are similar and find the missing length (represented by x) in the smaller triangle.

(1) b. Find the scale factor that was applied to triangle ΔABC to obtain triangle ΔDEF.

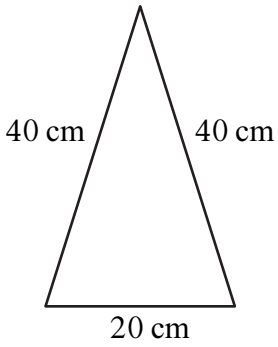
(2) 7. Calculate the diameter of the large cylinder below using the smaller cylinder. Round the answer to 1 decimal place.



(2) 8. Are the two triangles below similar when comparing the side lengths? Justify your answer.



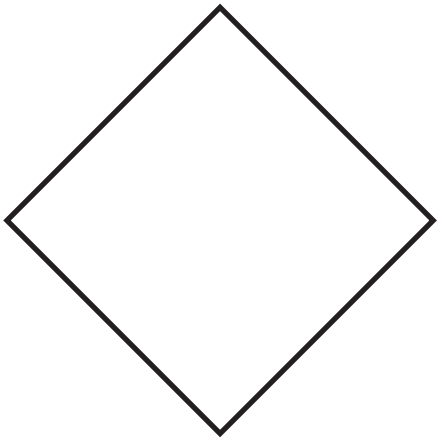
original



image

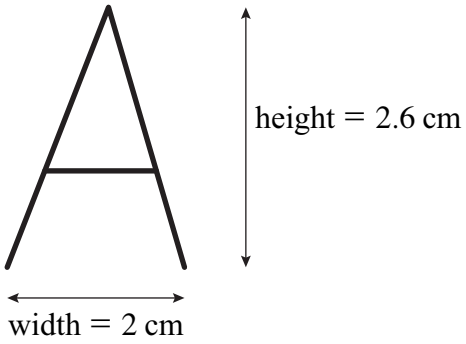
9. The diamond below has side lengths of $4\ \text{cm}$.

(2) a. Draw a diamond that is $\frac{1}{4}$ the size of the original.



(1) b. Explain how the original diamond and its image are proportional.

10. Using the diagram of the letter A to complete the following.



(2) a. Draw a similar letter A that is 2 times larger than the original.

(1) b. Explain how the original A and its image are proportional.

Lesson 2 Assignment

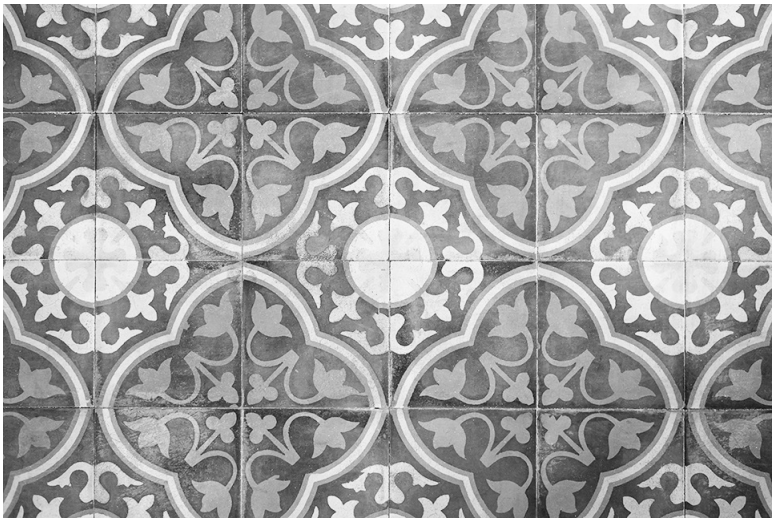
Translations

Work slowly and carefully. If you are having difficulty, go back and review the appropriate *Lesson*.

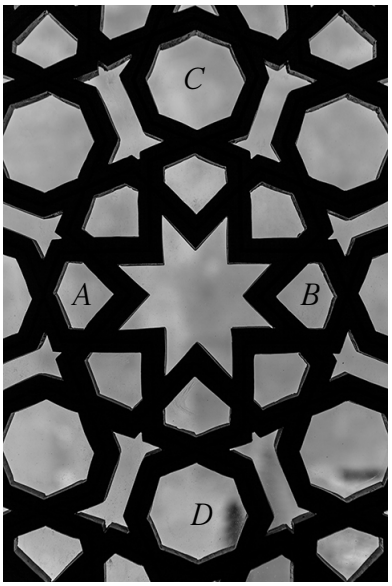
For full marks, show all calculations, steps, and/or explain your answers.

Total: 15 marks.

(1) 1. Identify one translation in the diagram below by drawing a box around an image and a box around its translated image.



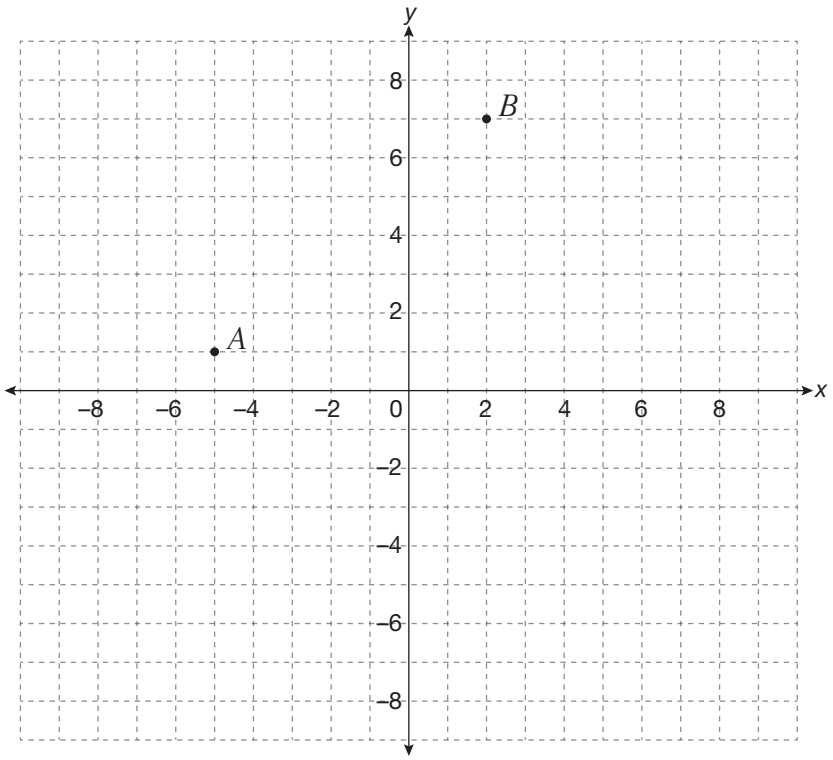
2. Use the diagram below to answer the following questions.



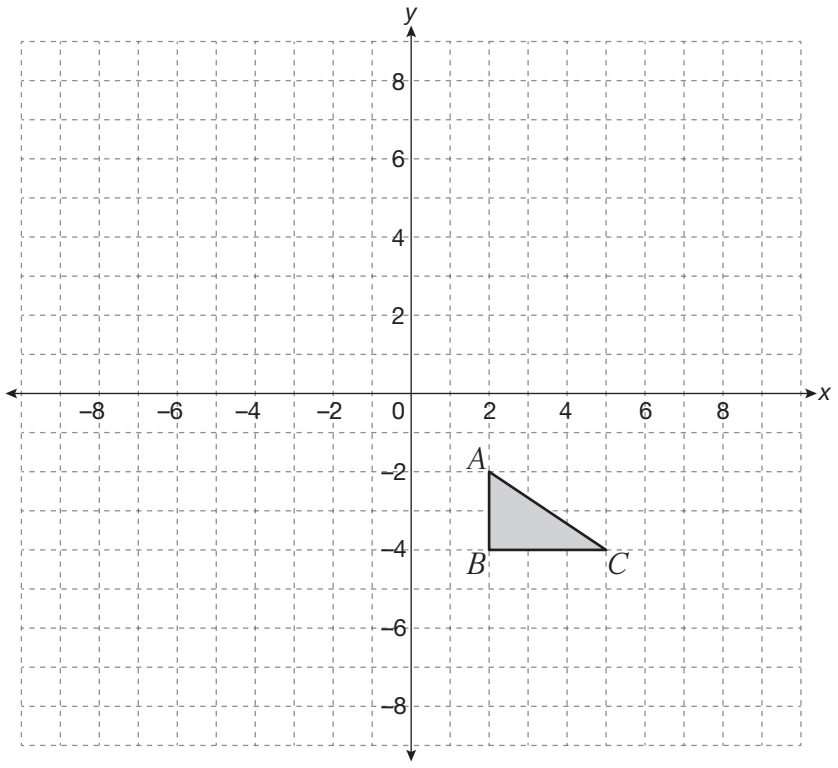
(1) a. Is it possible to move from shape A to shape B by using a translation?

(1) b. Is it possible to move from shape C to shape D by using a translation?

(1) 3. Describe the translation from point $A(-5,1)$ to point $B(2,-7)$.
Hint: State the horizontal and vertical movement of the point.



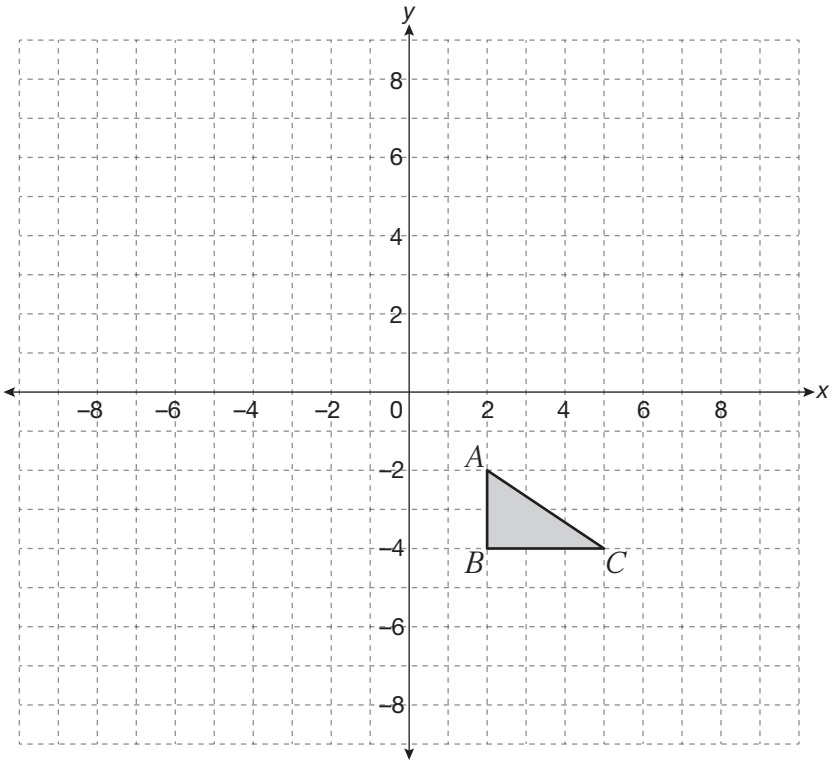
4. Use the graph below to answer the following questions.



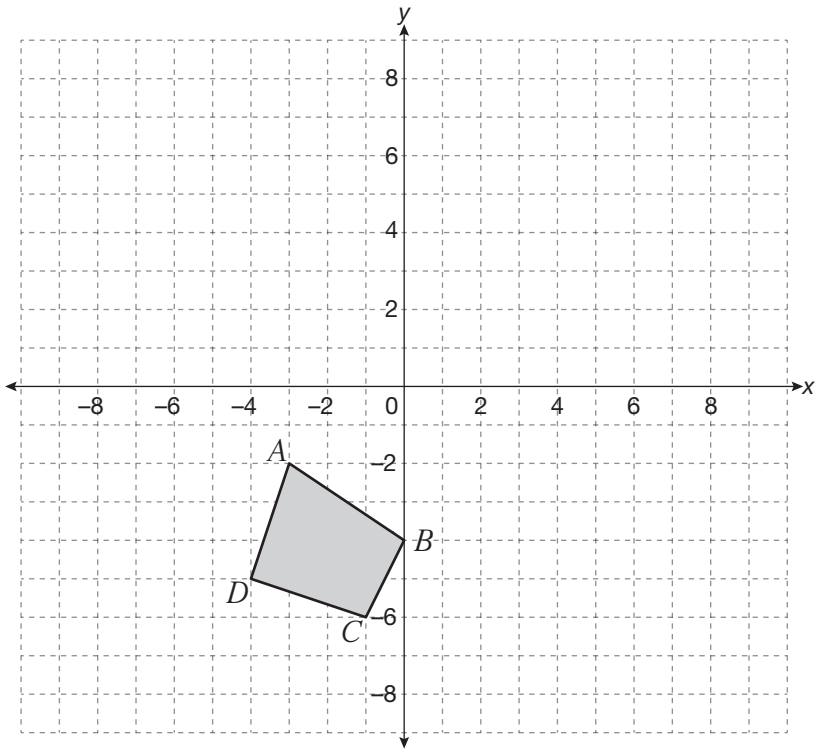
(1) a. State the coordinates of each vertex in the triangle.

(2)

b. Translate the triangle horizontally 6 units to the left and vertically 3 units up. Label each new vertex using the correct notation.



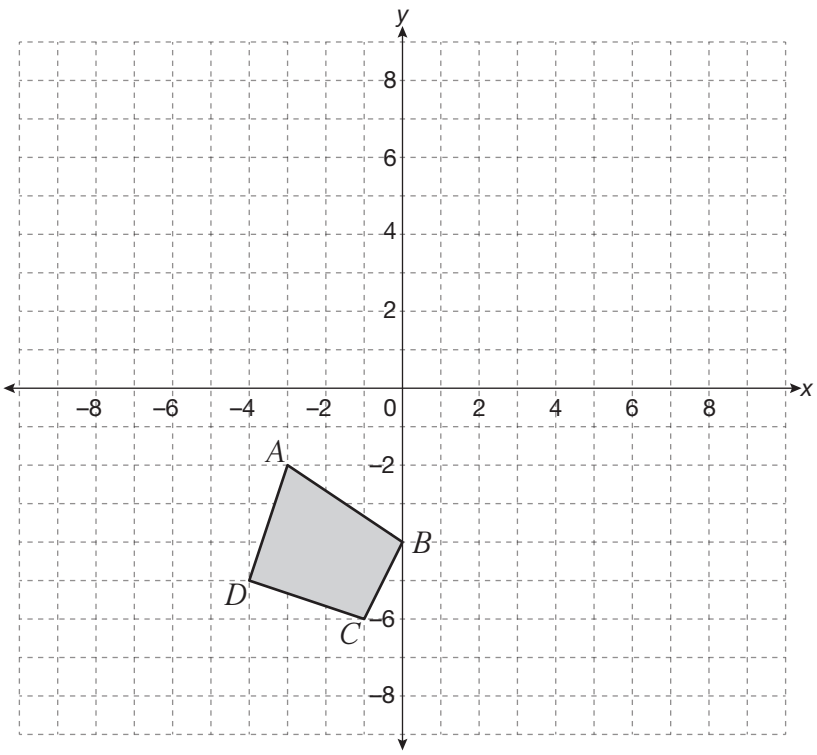
5. Use the graph below to answer the following questions.



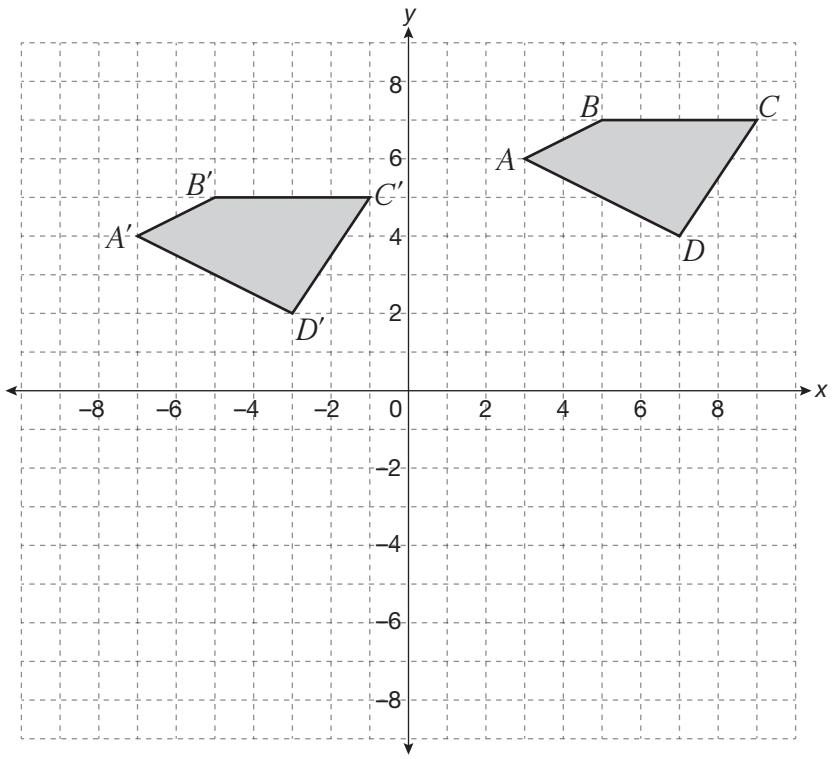
(1) a. State the coordinates of each vertex in the quadrilateral.

(2)

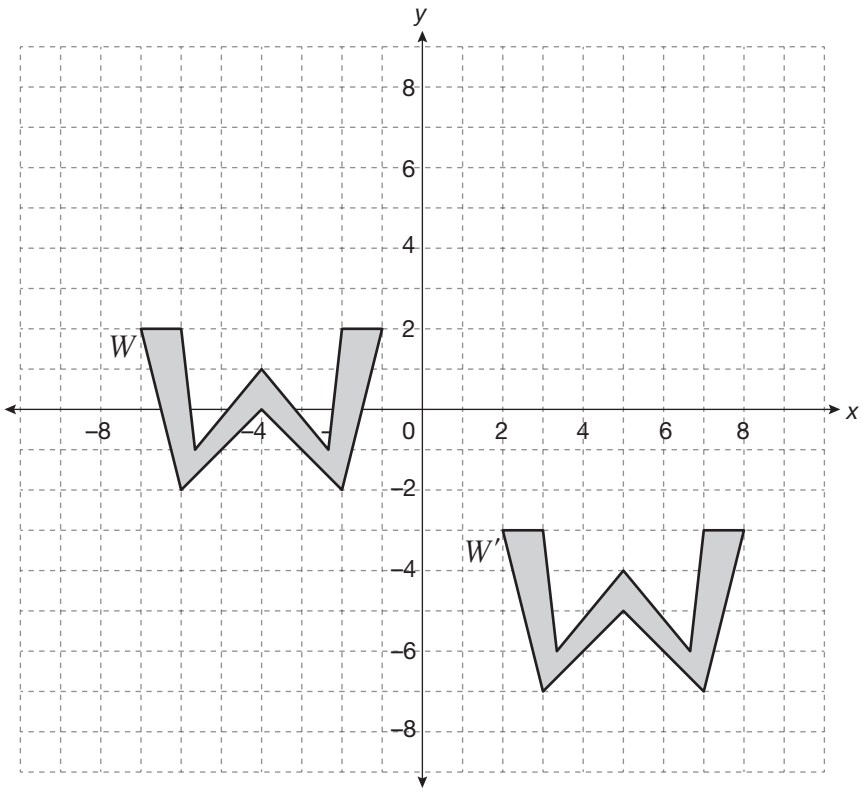
b. Translate the polygon horizontally 7 units to the right and vertically 1 unit up. Label each new vertex using the correct notation.



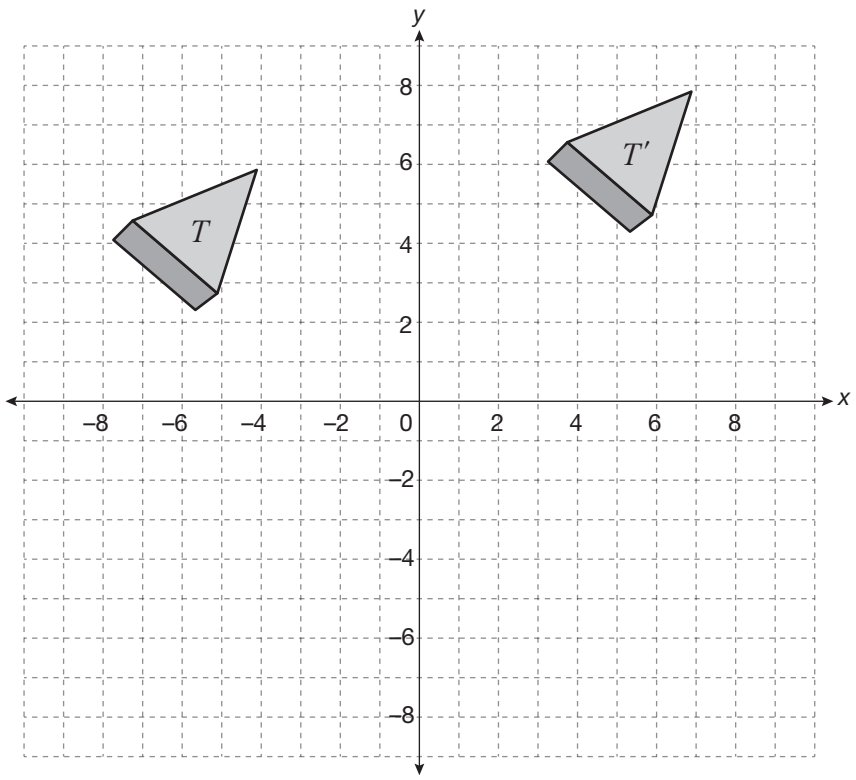
(1) 6. State the number of units the polygon has been translated horizontally and vertically and give the direction of each.



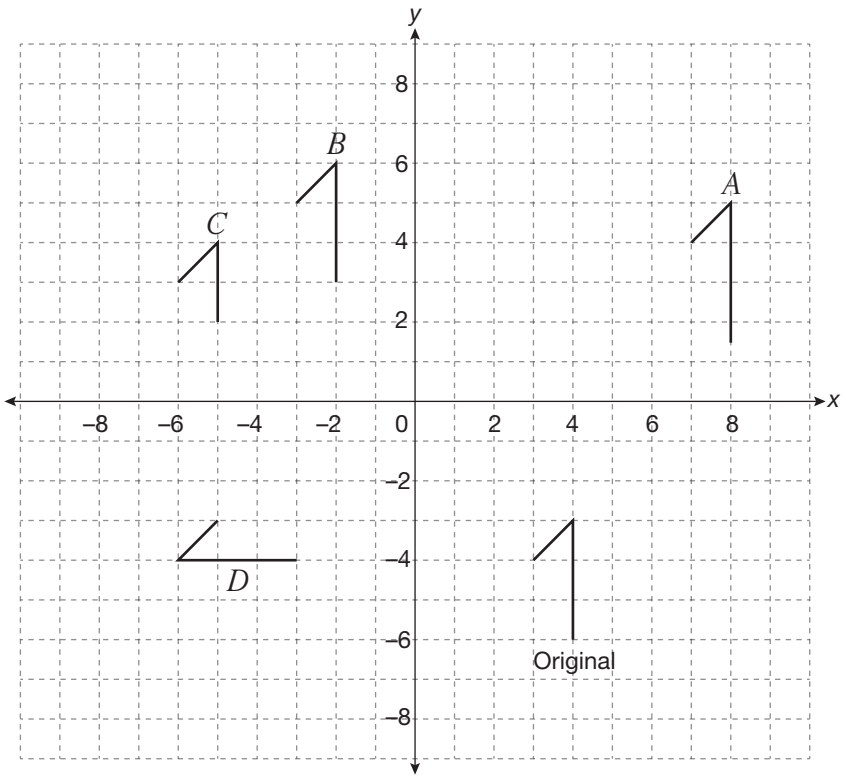
(1) 7. State the number of units the shape has been translated horizontally and vertically and give the direction of each.



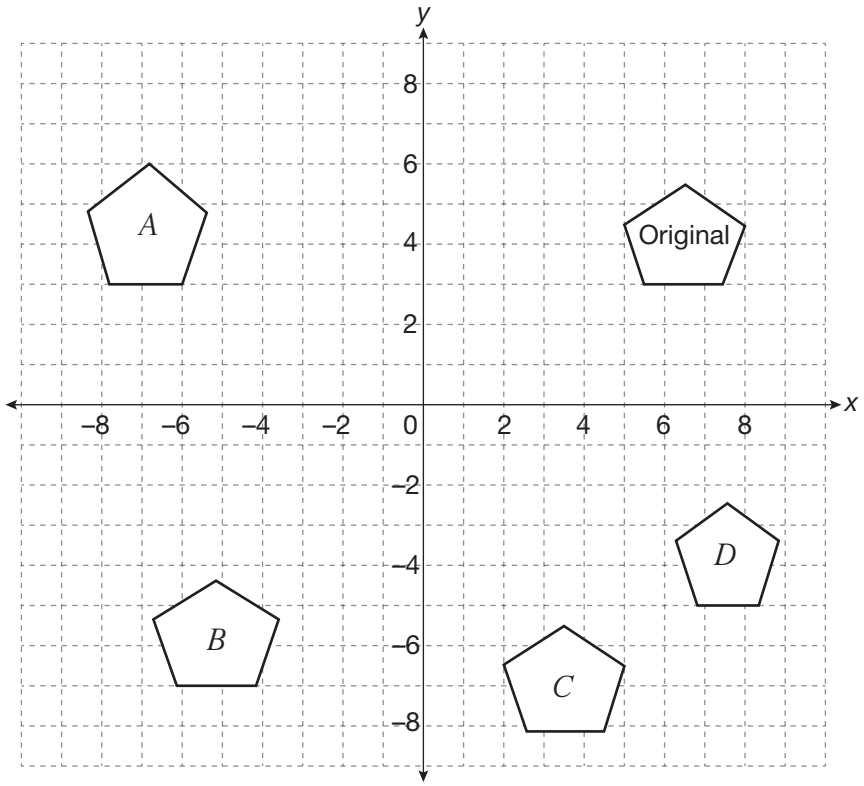
(1) 8. State the number of units the shape has been translated horizontally and vertically and give the direction of each.



(1) 9. Which image is a translation of the original shape?



(1) 10. Which image is a translation of the original pentagon?



Lesson 3 Assignment

Reflections

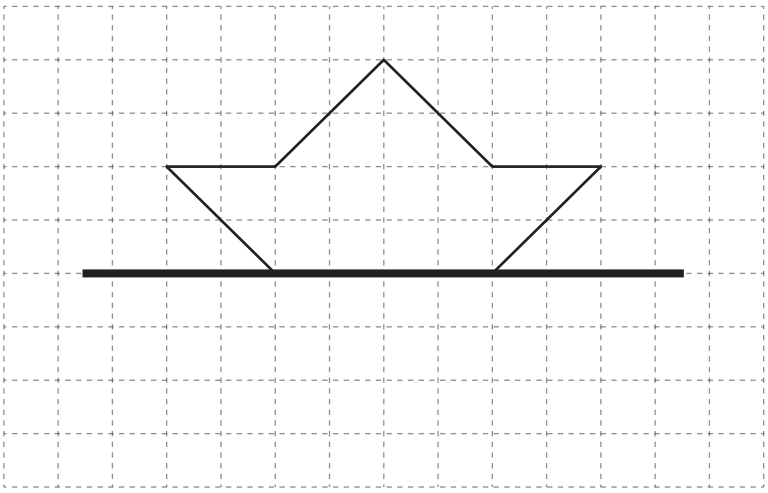
Work slowly and carefully. If you are having difficulty, go back and review the appropriate *Lesson*.

For full marks, show all calculations, steps, and/or explain your answers.

Total: 22 marks.

(1) 1. Draw the line of reflection in the picture below.

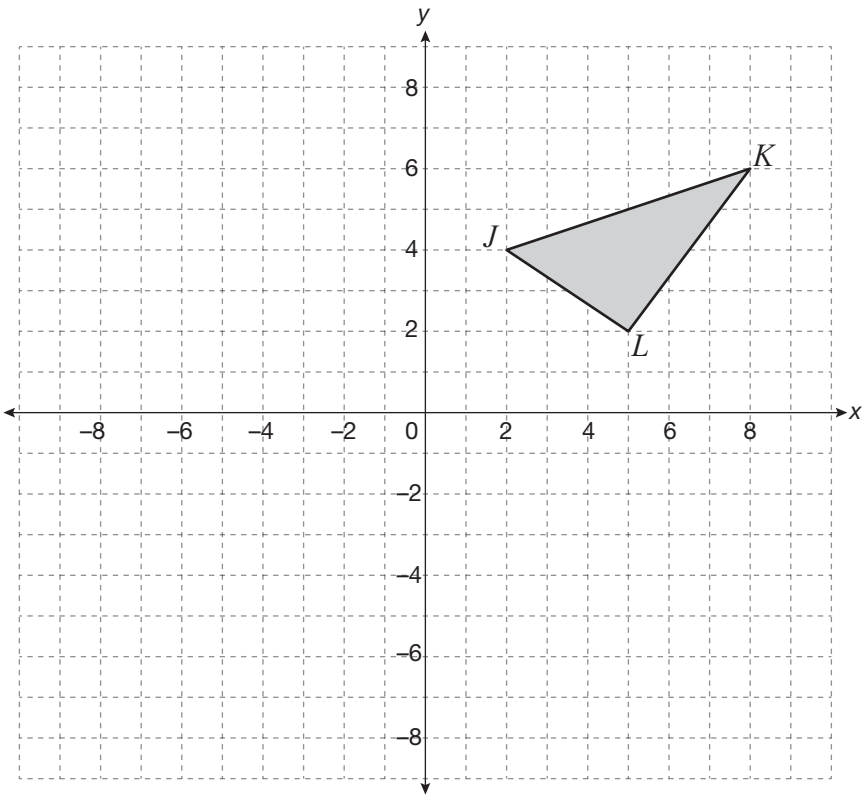
(1) 2. Complete the pattern by drawing the reflection of the image on the other side of the horizontal line of reflection.



3. Use ΔJKL to answer the following questions.

   a. Reflect ΔJKL in the x-axis to produce reflected image $J'K'L'$.

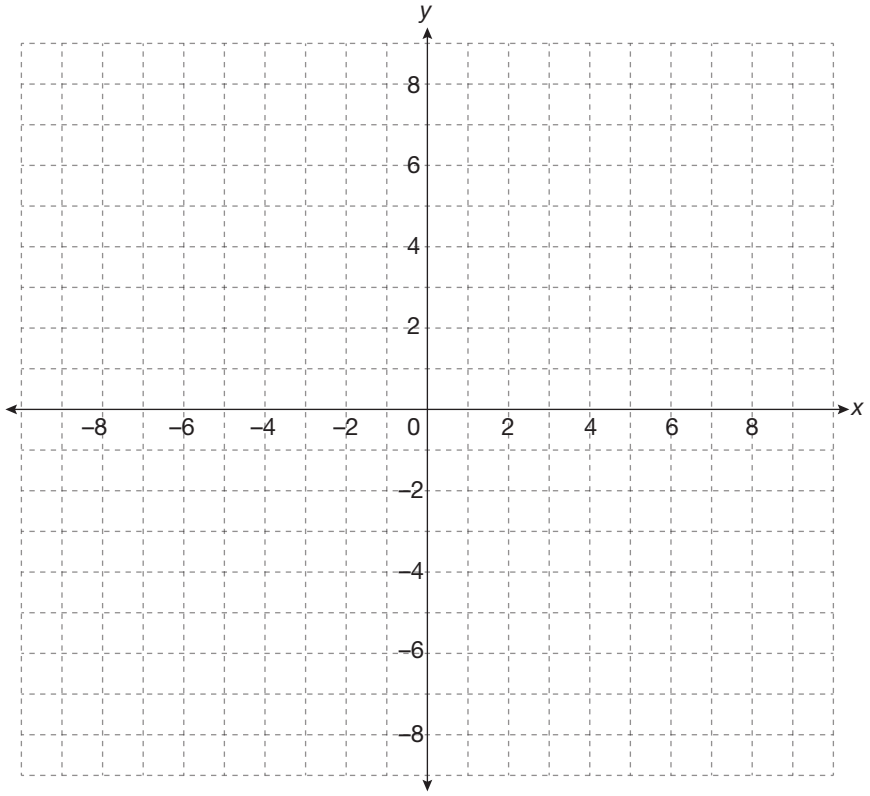
(2) i. Draw and label reflected image $J'K'L'$.



(1) ii. State the coordinates of each vertex.

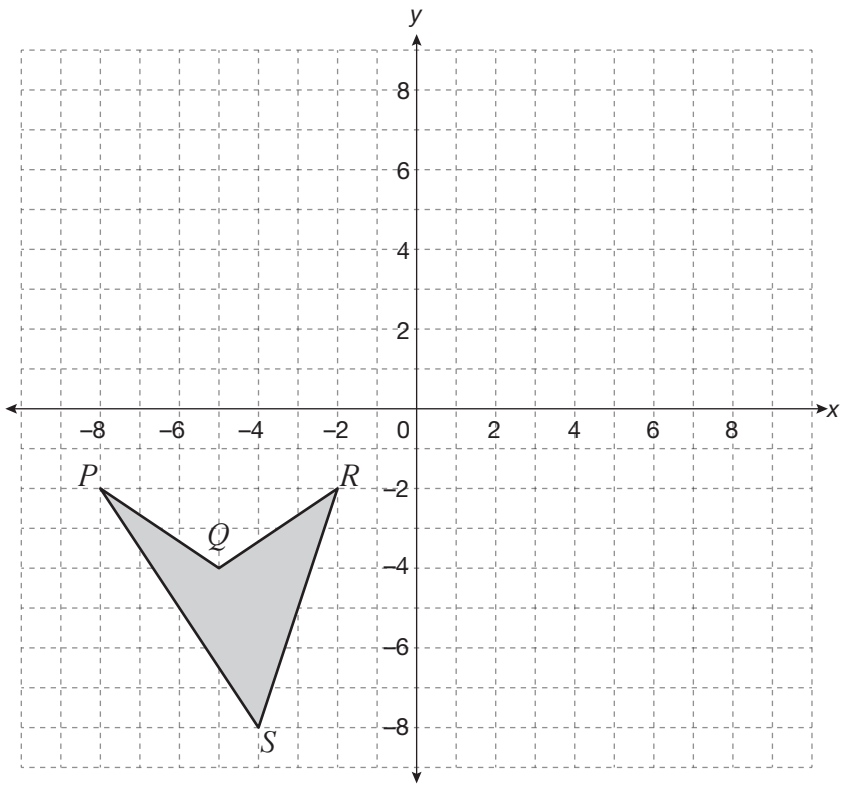
b. Translate image $J'K'L'$ horizontally 10 units to the left and vertically 7 units up.

(2) i. Draw and label $J''K''L''$.



(1) ii. State the coordinates of each vertex of the final image, triangle $J''K''L''$.

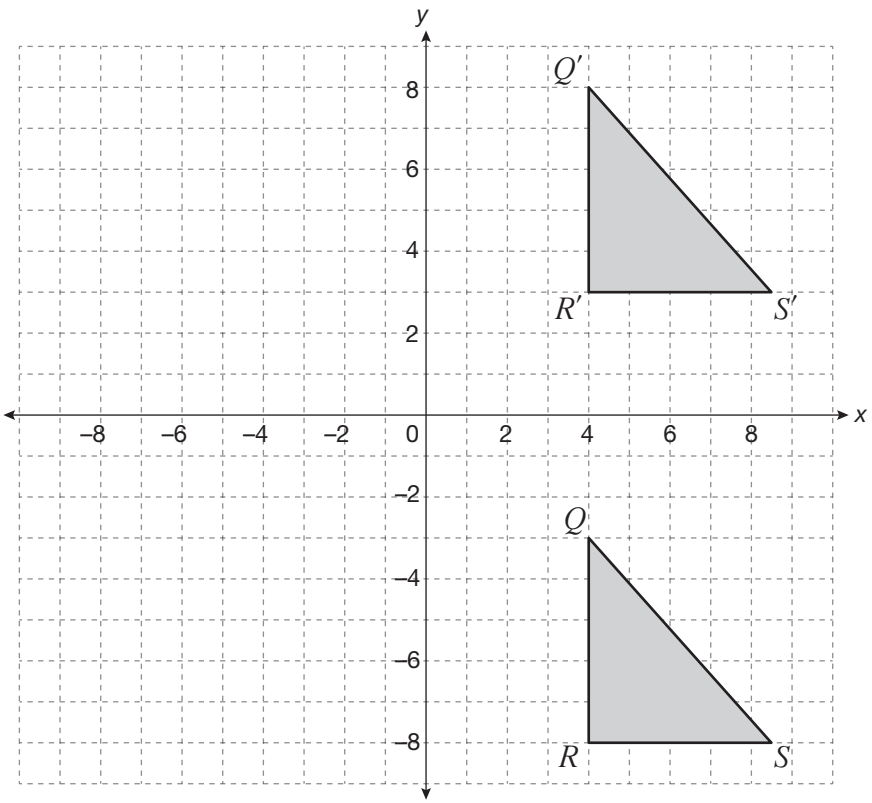
(4) 4. Reflect quadrilateral $PQRS$ in the y-axis and then in the x-axis. Draw and label the two images, $P'Q'R'S'$ and $P''Q''R''S''$.



5. Identify which type of transformation (dilation, translation, or reflection) has been applied to ΔQRS to obtain its image, $\Delta Q'R'S'$. Explain.

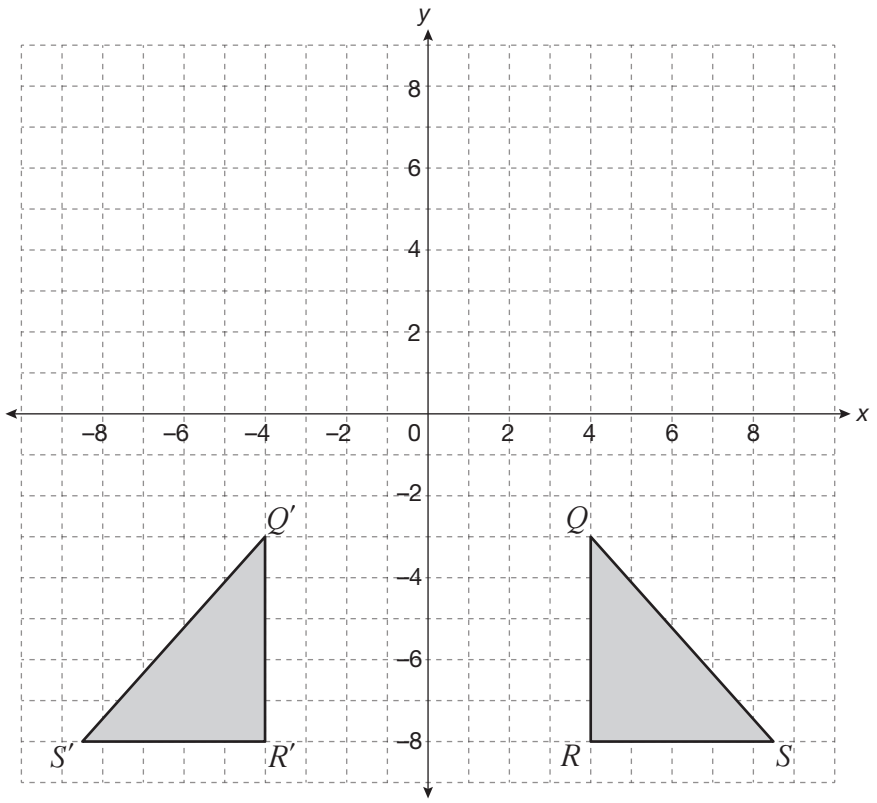
(2)

a.



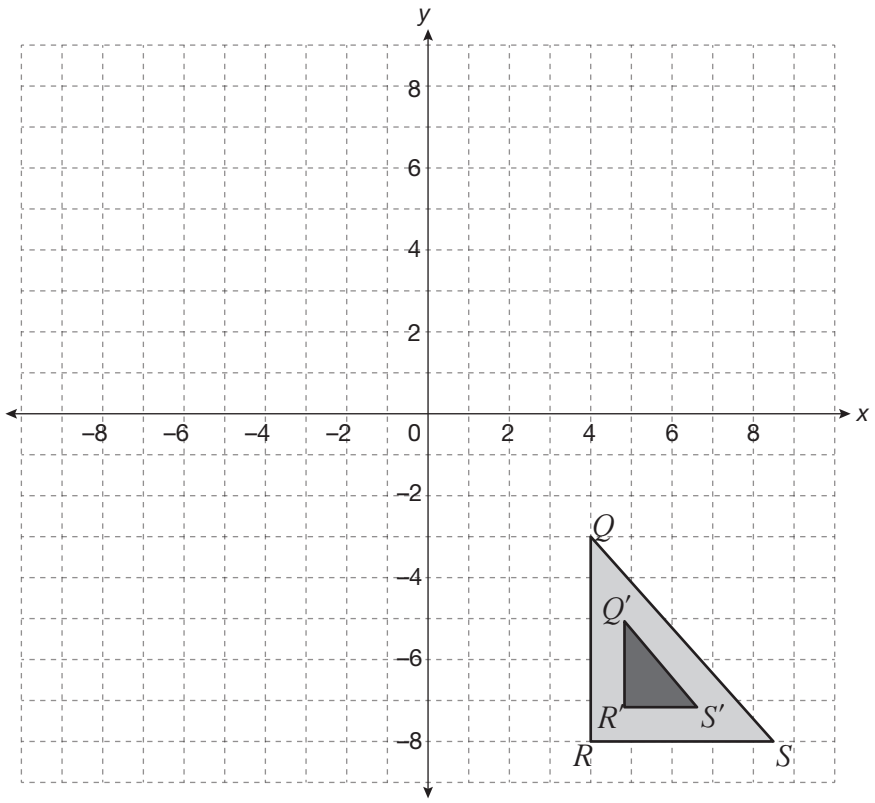
2

b.



2

c.



6. Examine the photo below.

(1) a. Draw the plane of symmetry.

(1) b. List two pairs of objects that are reflected in the plane of symmetry.

(1) c. List two items that are not reflected in the plane of symmetry.

(1) d. List two objects that are divided in half by the plane of symmetry.

Lesson 4 Assignment

Rotations

Work slowly and carefully. If you are having difficulty, go back and review the appropriate *Lesson*.

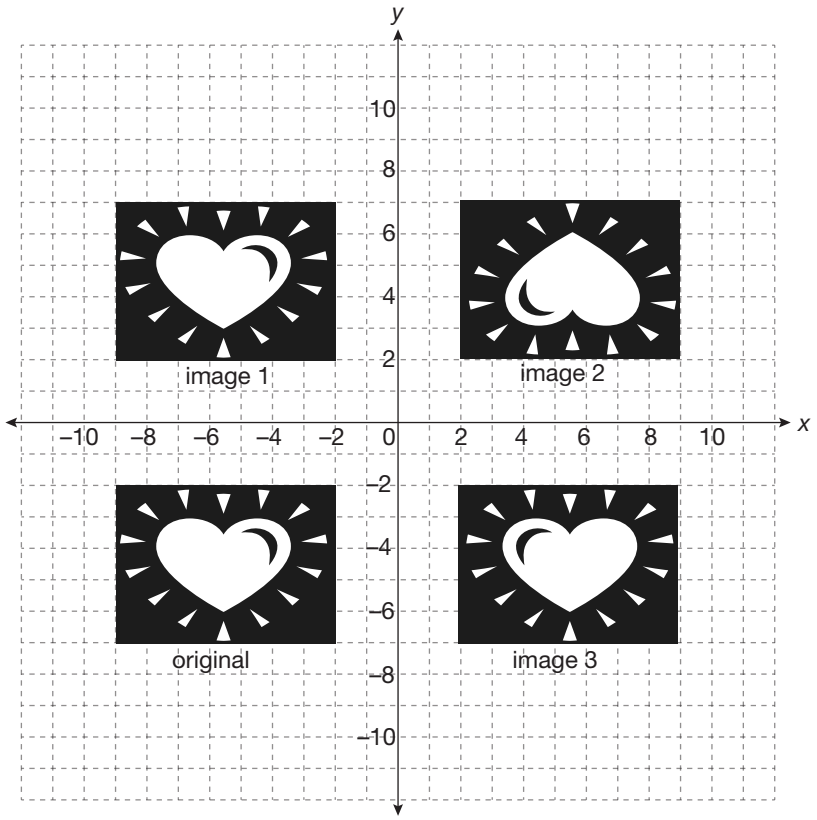
For full marks, show all calculations, steps, and/or explain your answers.

Total: 22 marks.

(2) 1. Match the rotations in the left column with the descriptions in the right column.

a. 90°	i. full turn
b. 180°	ii. quarter-turn
c. 270°	iii. three-quarter turn
d. 360°	iv. half turn

2. Look at the diagram below. The original image is labelled.



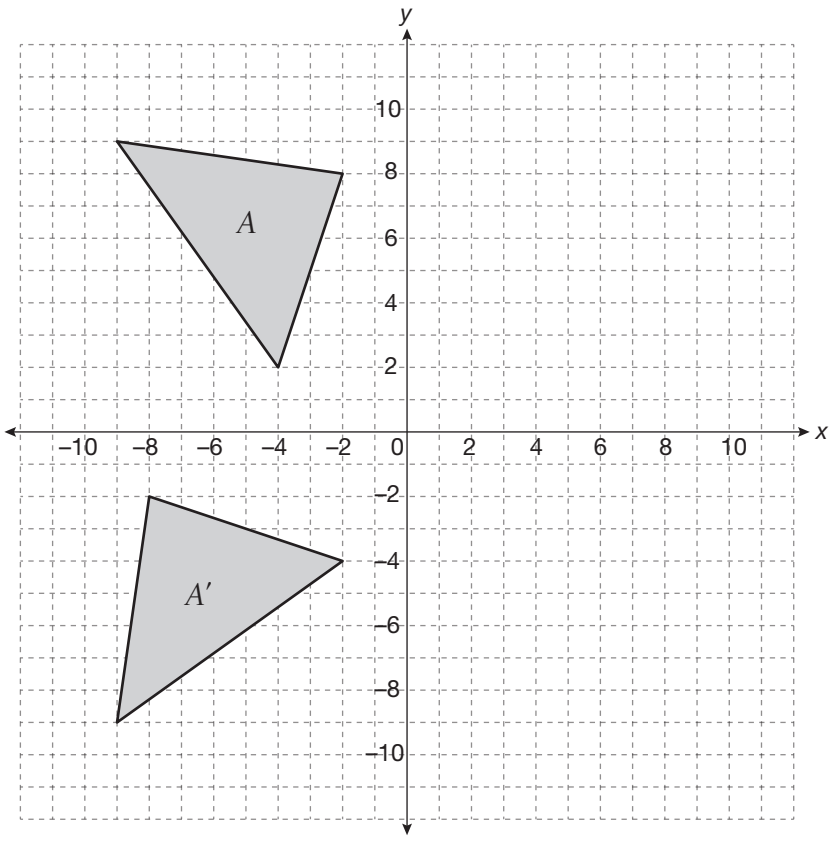
Identify each image as a dilation, reflection, rotation, or translation.

(1) a. Image 1

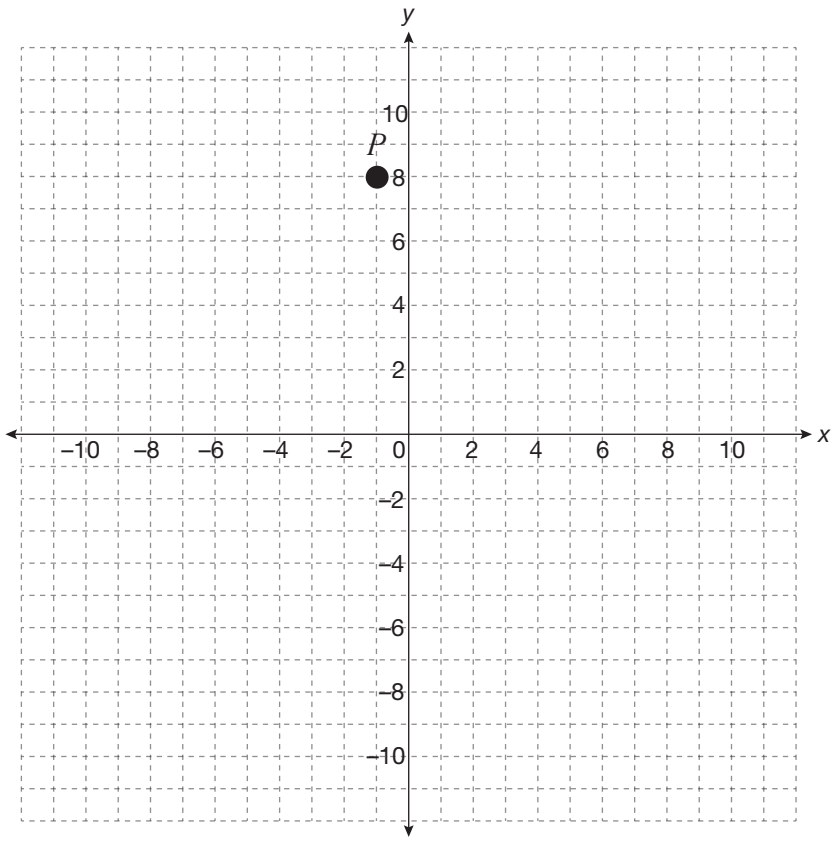
(1) b. Image 2

(1) c. Image 3

(1) 3. State the degree and direction of the rotation in the diagram.



4. Answer the following questions using point P.

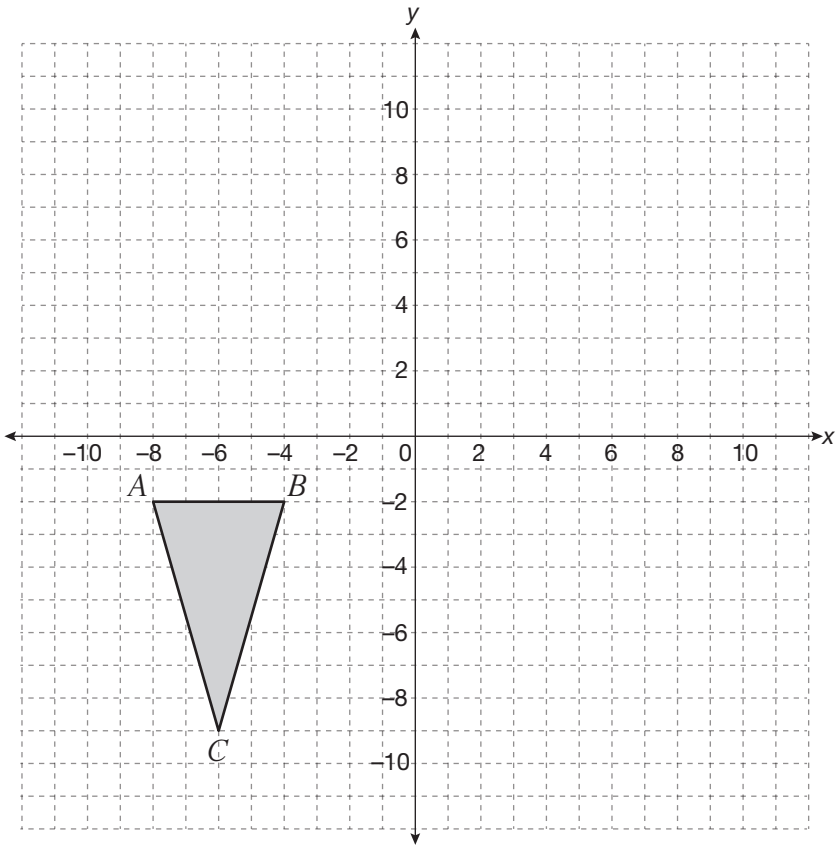


(1) a. Rotate point P 90° counterclockwise about the origin. State the coordinates of P'.

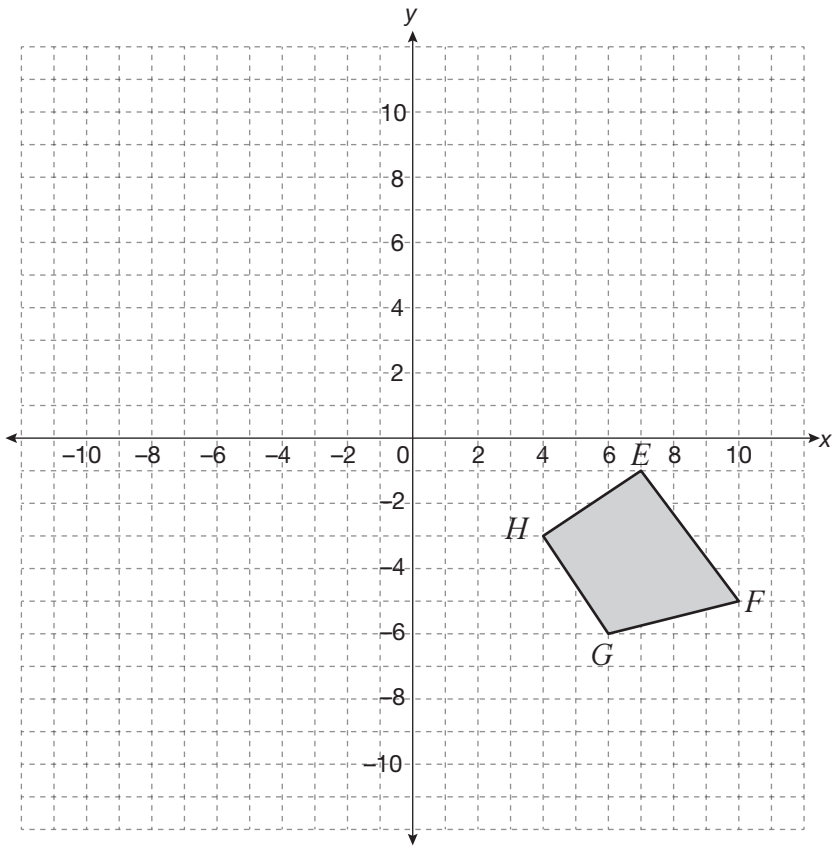
(1) b. Rotate point P 180° about the origin. State the coordinates of P'.

(1) c. Rotate point P 270° counterclockwise about the origin. State the coordinates of P'.

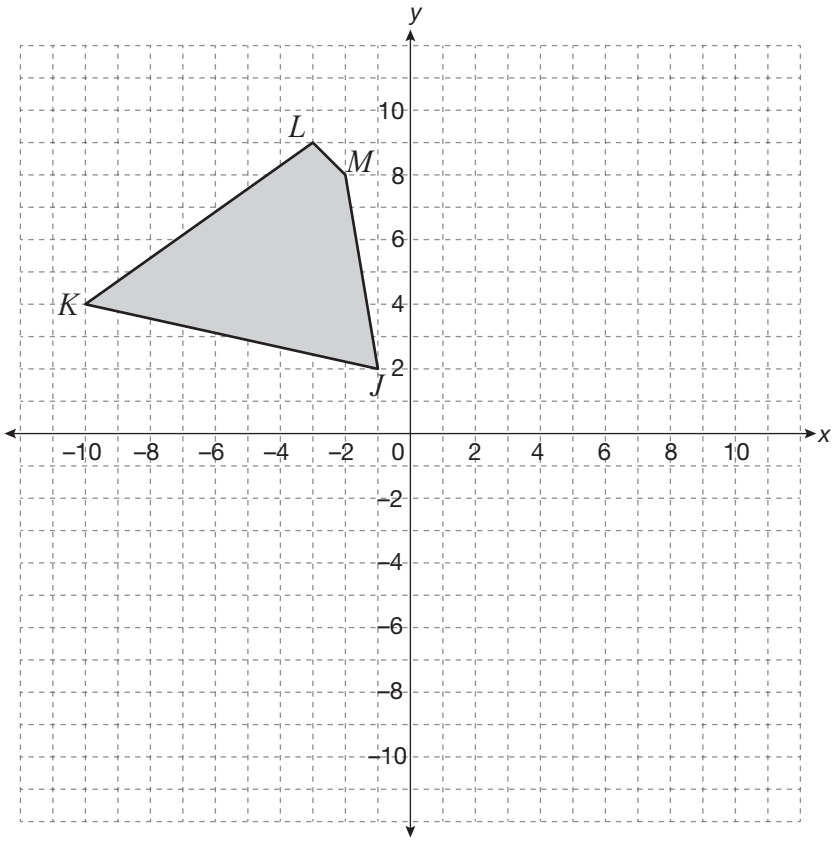
(2) 5. Rotate triangle ABC $270°$ clockwise about the origin. Draw and label image $A'B'C'$.



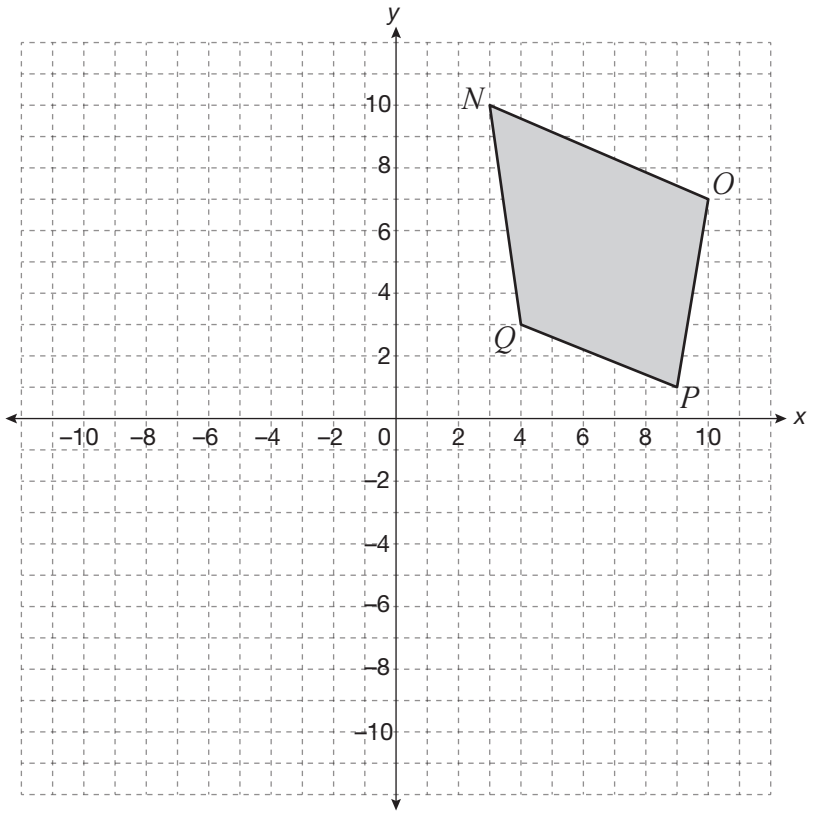
(2) 6. Rotate quadrilateral $EFGH$ $90°$ counterclockwise about the origin. Draw and label image $E'F'G'H'$.



(2) 7. Rotate quadrilateral $JKLM$ $180°$ about the origin. Draw and label image $J'K'L'M'$.

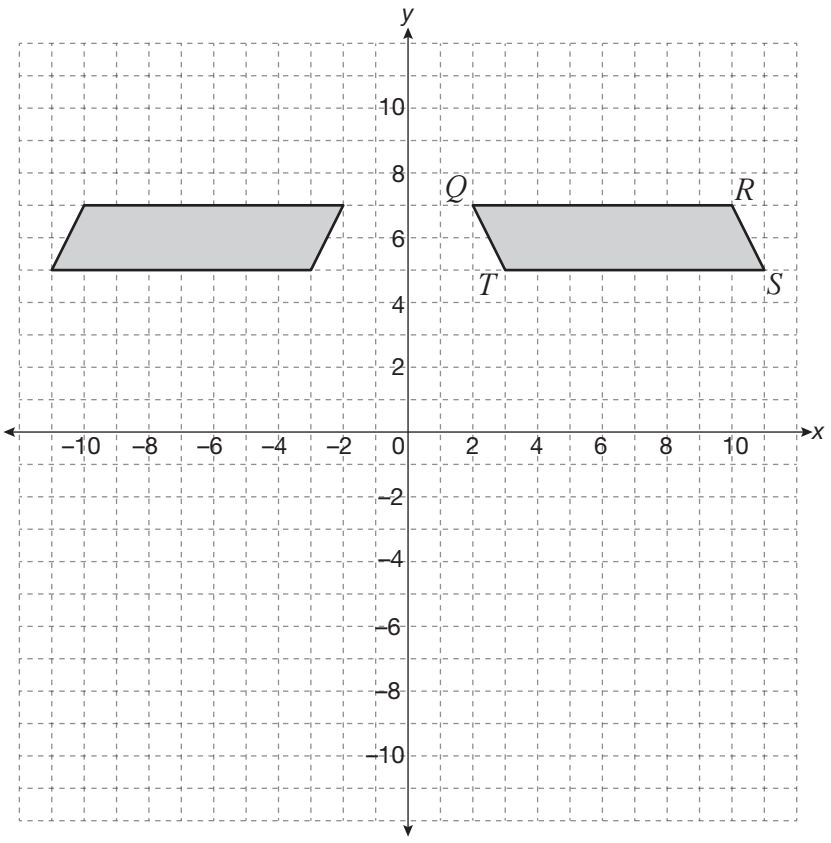


(1) 8. Quadrilateral $NOPQ$ is rotated $360°$ counterclockwise about the origin. State the coordinates of each vertex of image $N'O'P'Q'$.

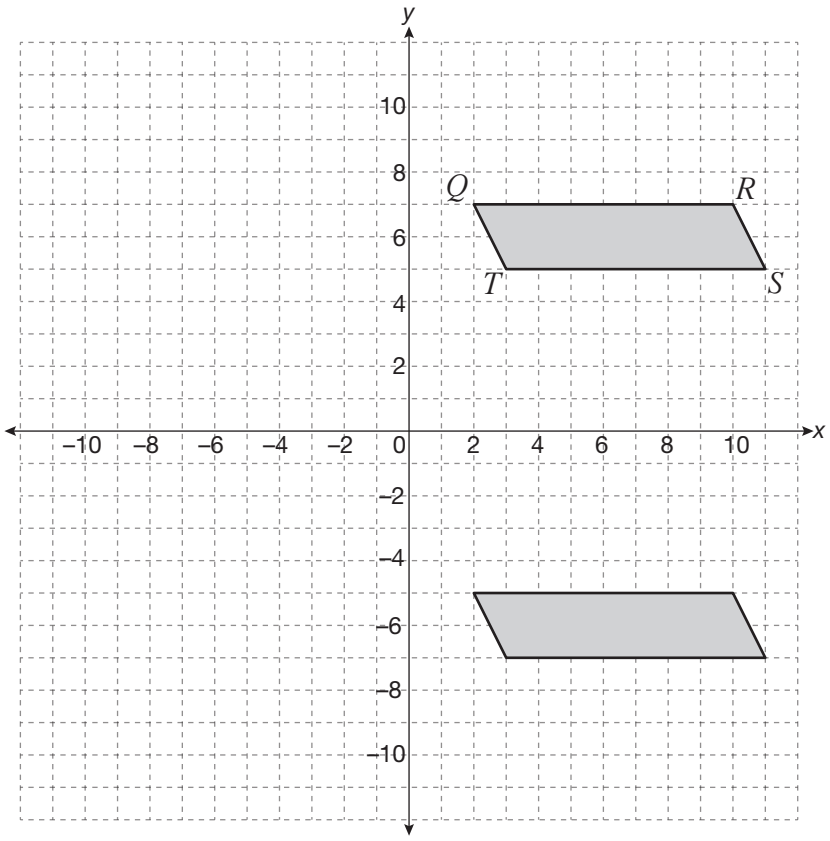


9. Only one transformation has been applied to $QRST$. Identify if the transformation is a dilation, translation, reflection, or rotation. Explain your reasoning.

(2) a.

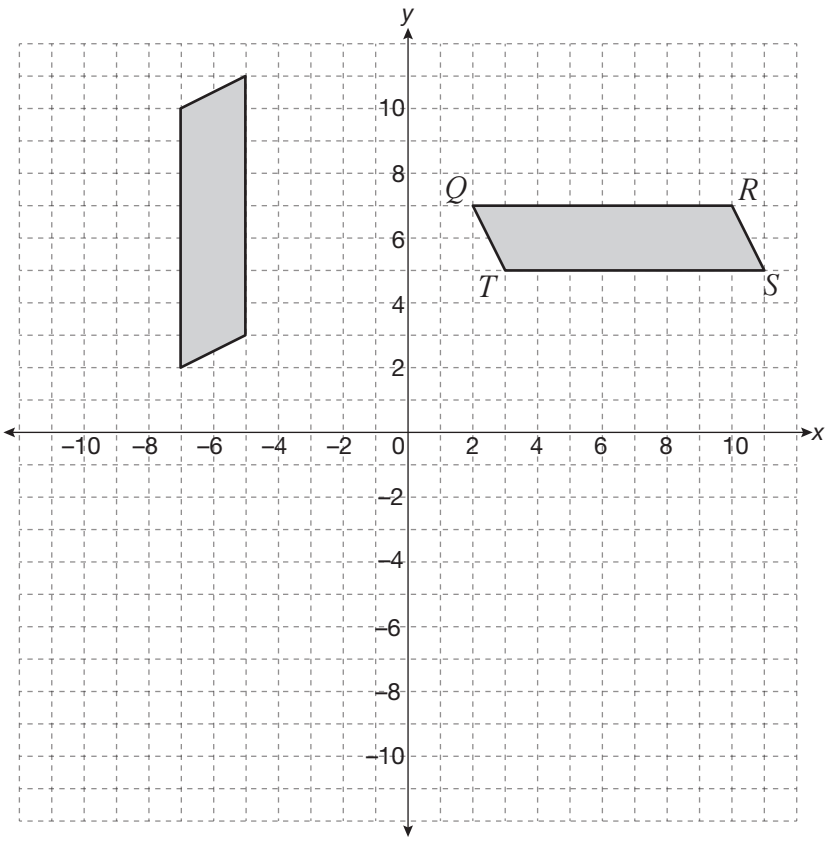


(2) b.



2

c.



Lesson 5 Assignment

Transformations

Work slowly and carefully. If you are having difficulty, go back and review the appropriate *Lesson*.

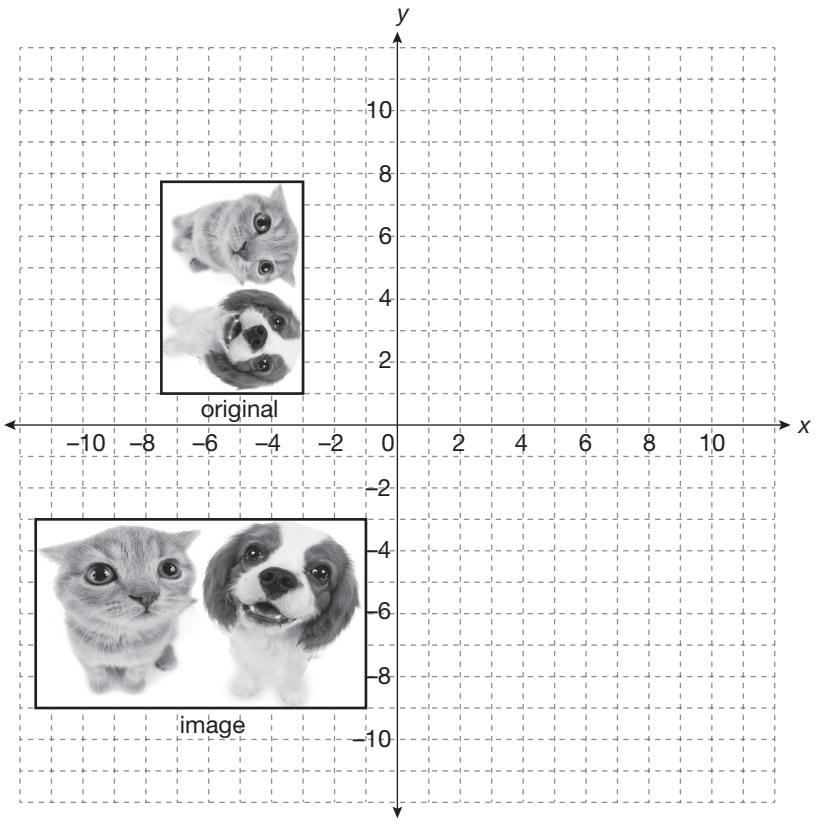
For full marks, show all calculations, steps, and/or explain your answers.

Total: 16 marks.

*For questions 1 to 4, select the **best** answer to each question.*

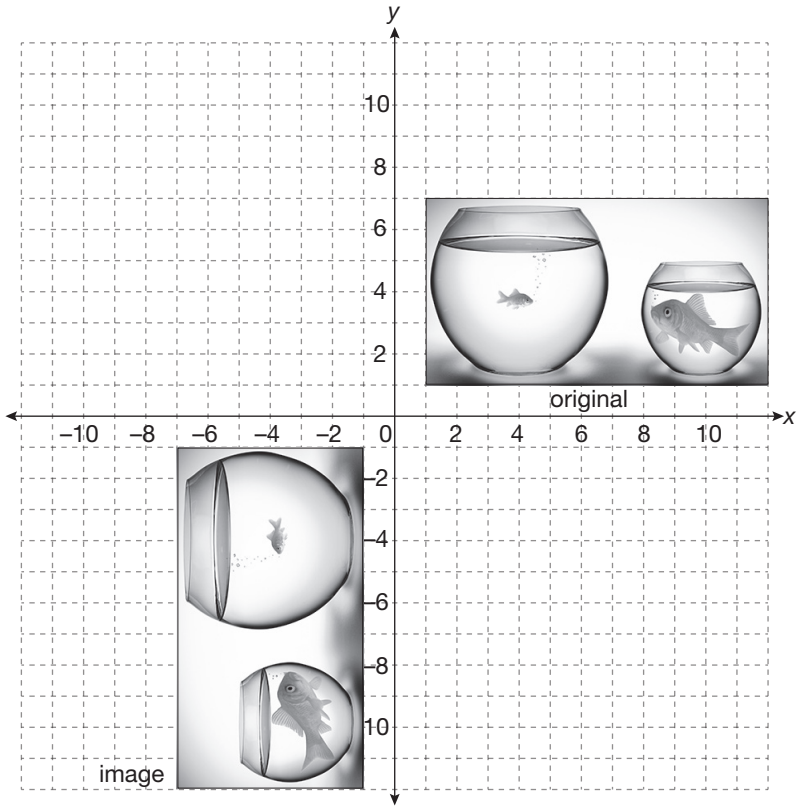
*Select the **best** answer for multiple-choice questions 1 and 2, choose the letter of your answer and write it on the line provided.*

(1) _____ 1. What two transformations were applied to the picture of the cat and dog to obtain the image?



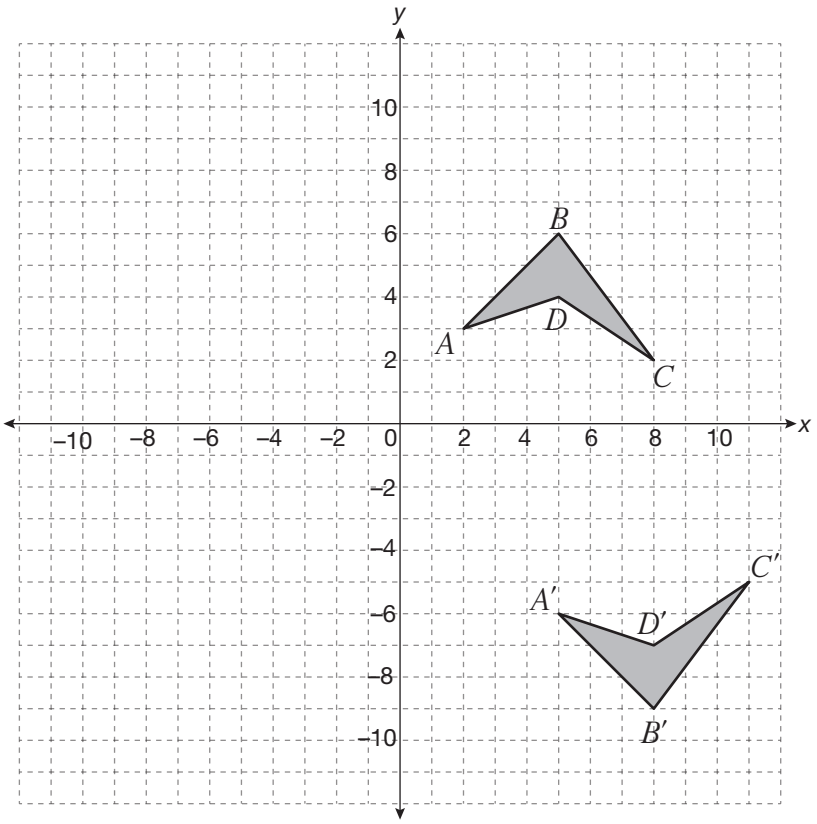
A. rotation and reflection
B. dilation and rotation
C. dilation and reflection
D. dilation and translation

1 _____ 2. What two transformations were applied to the picture of the goldfish to obtain the image?



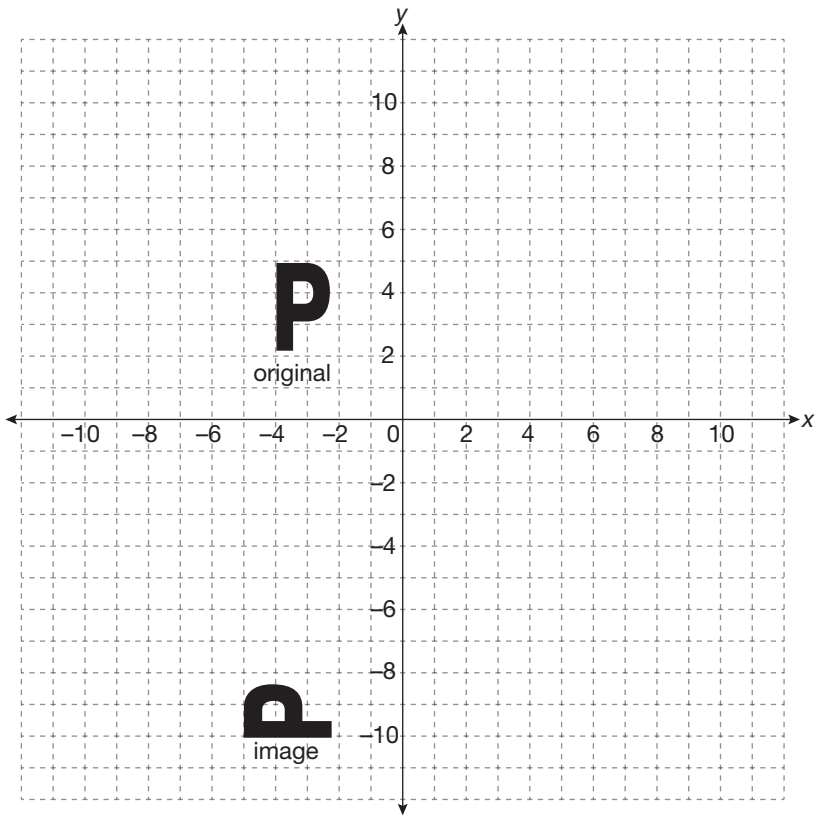
A. rotation and reflection
B. rotation and translation
C. reflection and translation
D. dilation and rotation

(1) _____ 3. What two transformations were applied to quadrilateral $ABCD$ below to obtain image $A'B'C'D'$?



A. rotation and reflection
B. rotation and translation
C. reflection and translation
D. dilation and rotation

(1) _____ 4 . What two transformations were applied to the P to obtain the image?

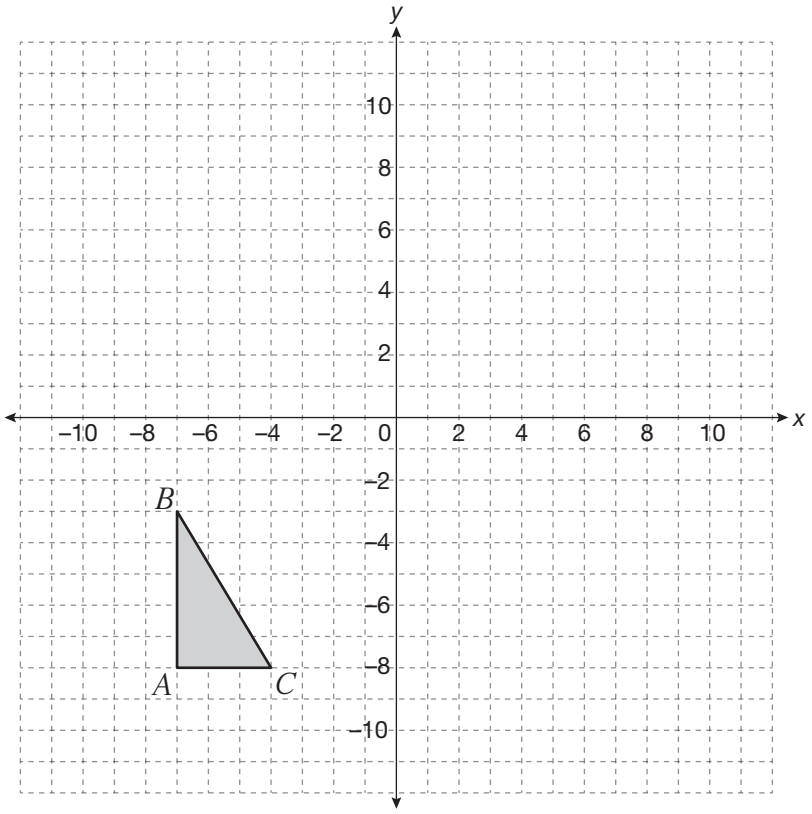


A. rotation and reflection
B. rotation and translation
C. reflection and translation
D. dilation and rotation

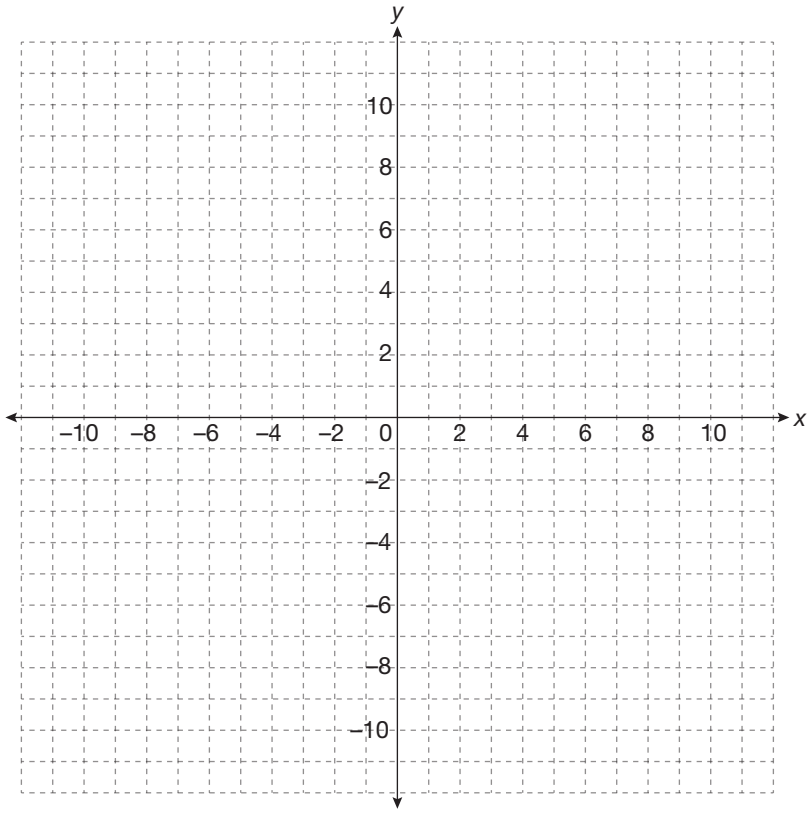
5. Perform the following transformations.

(2)

a. Rotate ΔABC $180°$ to produce the rotated image, $A'B'C'$. Draw and label rotated image $A'B'C'$.



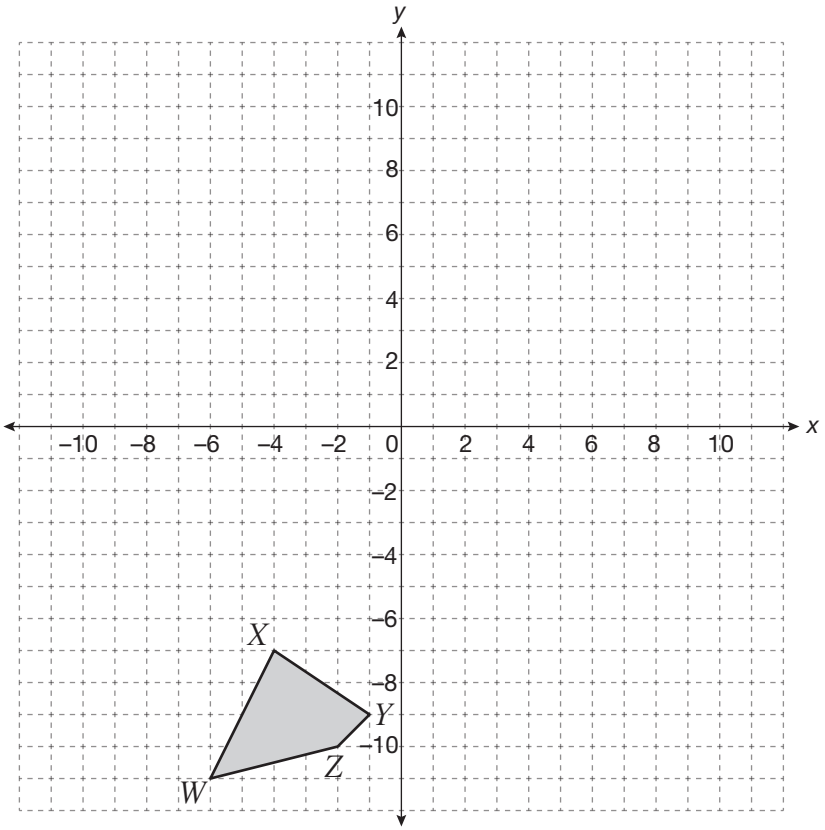
(2) b. Translate $\Delta A'B'C'$ horizontally 2 units to the left and vertically 10 units down. Draw and label the translated image, $A''B''C''$.



6. Use the graph to perform the following transformations.

   a. Rotate quadrilateral $WXYZ$ $270°$ counterclockwise to produce the rotated image, $W'X'Y'Z'$.

(2) i. Draw and label rotated image $W'X'Y'Z'$.

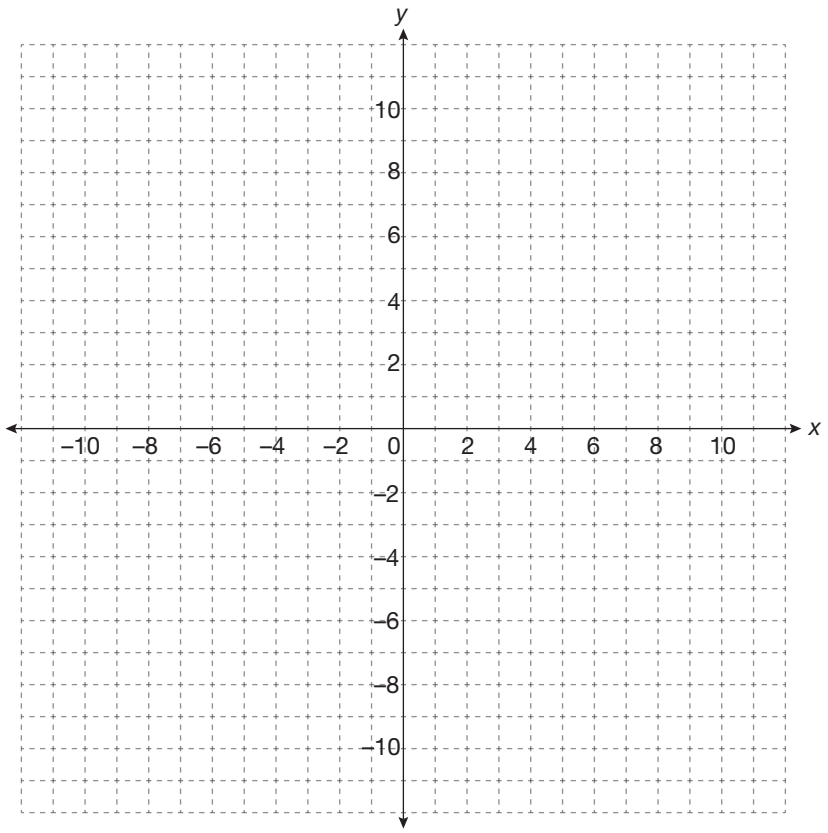


(1) ii. State the coordinates of each vertex.

b. Reflect quadrilateral $W'X'Y'Z'$ in the x-axis to produce the reflected image, $W''X''Y''Z''$.

(2)

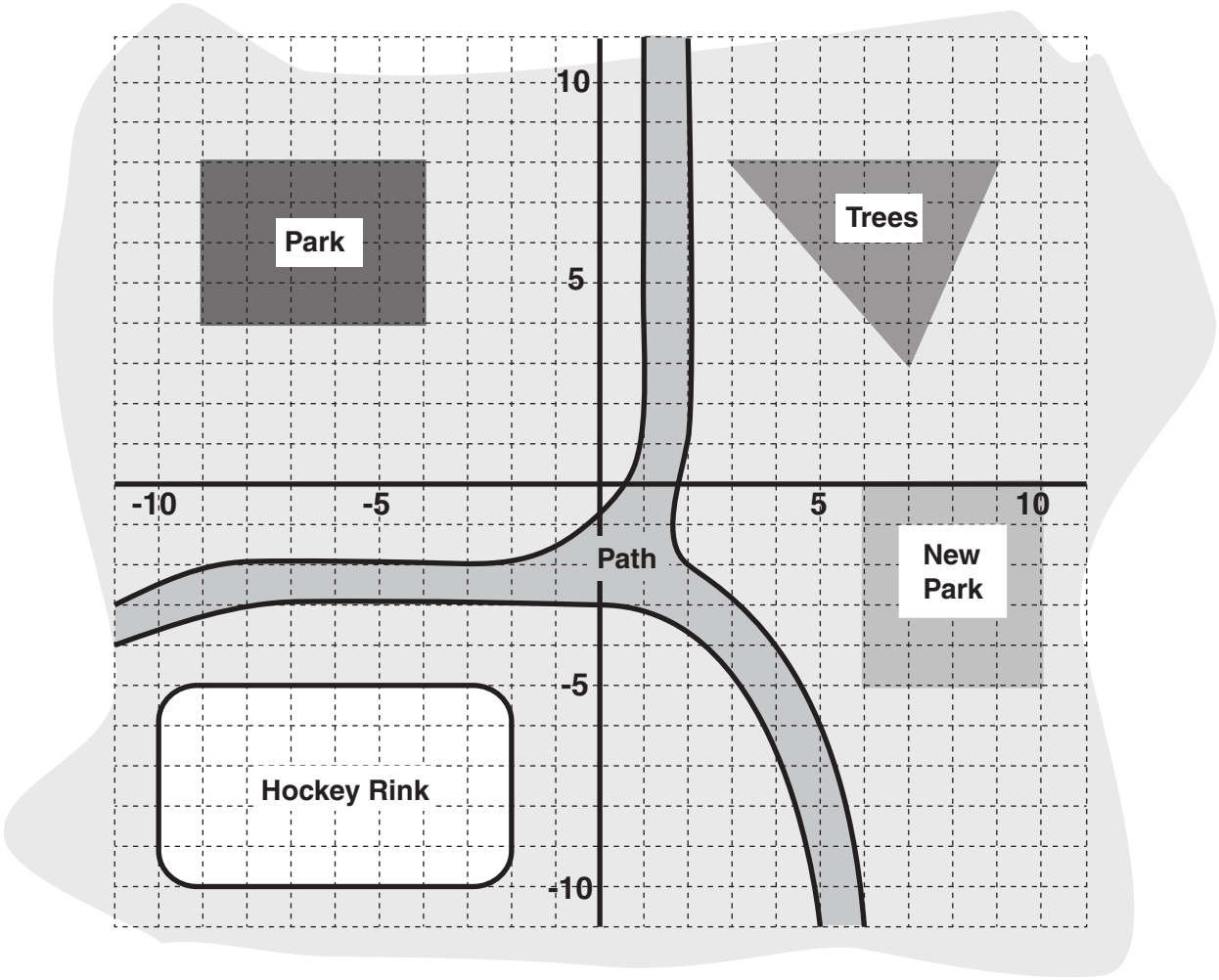
i. Draw and label reflected image $W''X''Y''Z''$.



(1)

ii. State the coordinates of each vertex.

7. Areas within a city park are being redeveloped. The current park has the following layout:



The contractor has been asked to move the Park (in quadrant 2) to a new location in the lower right-hand side of the area (in quadrant 4), which is labelled “New Park.” A soccer field is to be built where the original Park was located.

(1) a. Could a single transformation be applied to move the Park from its current location to the New Park location? If so, explain the transformation.

(1) b. Provide a possible combination of two transformations that would move the Park from its current location to the New Park location.

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