

# EOT T2 Exam Coverage Grade 8 GEN 2023-2024

Academic Year السنة الدراسية	2023/2024
Term الفصل	2
Subject المادة	Mathematics/Reveal الرياضيات/إيريفيل
Grade الصف	8
Stream المسار	General العام
Number of MCQ عدد الأسئلة الموضوعية	15
Marks of MCQ درجة الأسئلة الموضوعية	4
Number of FRQ عدد الأسئلة المقالية	4
Marks per FRQ الدرجات للأسئلة المقالية	(8-12)
Type of All Questions نوع كافة الأسئلة	MCQ/ الأسئلة الموضوعية FRQ/ الأسئلة المقالية

Maximum Overall Grade الدرجة القصوى الممكنة	100
Exam Duration - مدة الامتحان	150 minutes
Mode of Implementation - طريقة التطبيق	SwiftAssess & Paper-Based
Calculator الإلحة الحاسبة	Not Allowed غير مسموحة

Question* السؤال*	Learning Outcome/Performance Criteria** نتائج التعلم/معايير الأداء**	Reference(s) in the Student Book (English Version) المرجع في كتاب الطالب (النسخة الإنجليزية)	
		Example/Exercise مثال/تمرين	Page الصفحة
الأسئلة الموضوعية - MCQ	1	Determine whether or not a relation is a function by identifying the number of outputs assigned to each input	1 to 5   261
	2	Generate function tables from function rules and use the sets of ordered pairs to graph the functions	1 to 8   271, 272
	3	Write linear functions from graphs, tables, and verbal descriptions by finding the rate of change and initial value	1 to 4   283
	4	Determine if a function, represented in different forms, is a linear or nonlinear function by using the rate of change, shape of the graph, or structure of the equation	1 to 7   303
	5	Recognize a qualitative graph and interpret the scenario it represents as well as create a qualitative graph	1 to 4   311
	6	Write equations in slope-intercept form to graph them and use the graphs to solve a system of equations	1 to 5   329
	7	Use the slope-intercept form of lines in order to determine whether a system of equations has zero, one, or infinitely many solutions	1 to 12   339, 340
	8	Use elimination to solve a system of linear equations	1 to 11   361
الأسئلة المقالية - FRQ	9	Write and solve a system of equations that models a real-world scenario	1 to 5   373
	10	Use the relationships between angles formed by two parallel lines cut by a transversal to find the measures of missing angles	1 to 8   391
	11	Use the relationships between angles formed by two parallel lines cut by a transversal to find the measures of missing angles.	1 to 8   391
	12	Find the measures of interior and exterior angles in a triangle by using relationships between these angles.	1 to 6   403
	13	Find the measures of the sides of a right triangle using the Pythagorean Theorem and square roots	1 to 6   415
	14	Find the distance between two points on a coordinate plane using the Pythagorean Theorem	1 to 6   427
	15	Translate figures on the coordinate plane and use coordinate notation to describe translations	1 to 6   443
	16	Compare functions that are represented in different ways using their initial values and rates of change	1 to 8   291, 292
	17	Use substitution to solve a system of linear equations, including those that have zero or infinitely many solutions	1 to 11   349
	18	Determine if a triangle is a right triangle by using the converse of the Pythagorean Theorem	1 to 8   421
	19	Describe reflections of figures on the coordinate plane using coordinates and coordinate notation	1 to 6   453

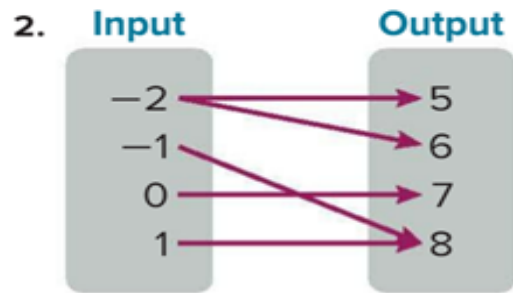
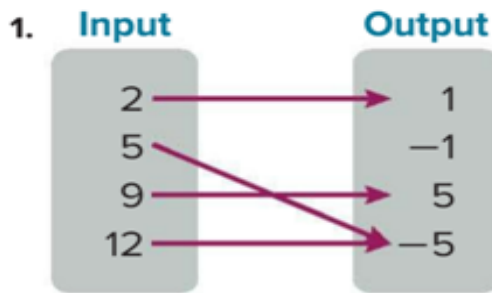
*	Questions might appear in a different order in the actual exam.	قد تظهر الأسئلة بترتيب مختلف في الامتحان الفعلي.
**	As it appears in the textbook, LMS, and (Main_IP).	كما وردت في كتاب الطالب و LMS والخطة الفصلية.

## Practice..

PG.261

5.1

Determine whether each relation is a function. Explain.



## Practice..

PG.261

5.1

Determine whether each relation is a function. Explain.

3.

Input, $x$	Output, $y$
-10	4
-5	4
0	4
5	4

4.

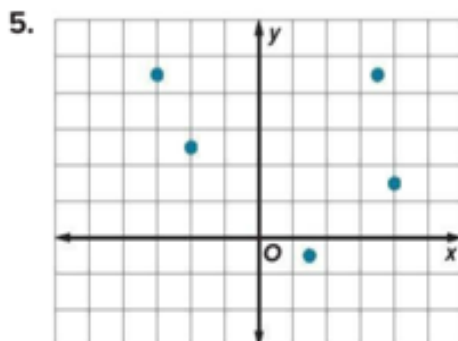
Input, $x$	Output, $y$
1	2
1	3
1	4
1	5

## Practice..

PG.261

5.1

Determine whether each relation is a function. Explain.



## Practice..

PG.271-272

5.2

Complete the function table for each function given. (Example 1)

1.  $y = 2.5x - 8$

Input, $x$	Output, $y$
-5	
0	
5	
10	

2.  $y = -5x - 1$

Input, $x$	Output, $y$
-2	
-1	
0	
1	

3.  $y = \frac{1}{2}x + 3$

Input, $x$	Output, $y$
-2	
2	
6	
10	

4. A single-engine plane can travel up to 140 miles per hour. The total number of miles  $m$  is represented by the function  $m = 140h$ , where  $h$  is the number of hours traveled. Determine appropriate input values for this situation. Then complete the function table for  $m = 140h$ . (Example 2)

Input, $h$	Output, $m$

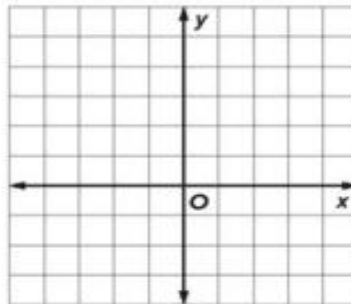
## Practice..

PG.271-272

5.2

5. Create a function table for the function  $y = -2x + 1$ . Then graph the function. (Example 3)

Input, $x$	Output, $y$
-2	
-1	
0	
1	



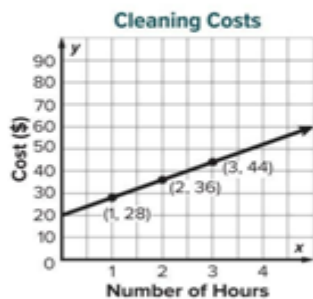
6. **Multiselect** Select all of the possible types of numbers that are appropriate input values for the given situation.

A flower-delivery service charges \$39.95 per flower arrangement and \$2.99 for delivery. The total cost  $y$  is represented by the function  $y = 39.95x + 2.99$ , where  $x$  is the number of flower arrangements.

- whole numbers
- integers
- rational numbers
- positive integers
- negative numbers
- only zero

# Practice..

- A cleaning service charges an initial fee plus an hourly rate. The total cost for different numbers of hours, including the initial fee, is shown on the graph. Find and interpret the rate of change and initial value. Then write the equation of the function in the form  $y = mx + b$ . (Example 1)



- The table shows the distance Penelope is from the park as she walks to soccer practice. Assume the relationship between the two quantities is linear. Find and interpret the rate of change and initial value. Then write the equation of the function in the form  $y = mx + b$ . (Example 2)

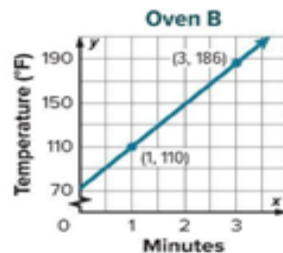
Time (min), x	Distance (m), y
5	1,930
10	1,380
15	830
20	280

# Practice..

- Gennaro is considering two job offers as a part-time sales person. Company A will pay him \$12.50 for each item he sells, plus a base salary of \$500 at the end of the month. The amount Company B will pay him at the end of the month is shown in the table. Compare the functions' initial values and rates of change. Then determine how much more Gennaro would make at Company A if he sells 28 items by the end of the month. (Example 1)

Number of Items Sold, x	Total Earned (\$), y
5	425
10	500
15	575

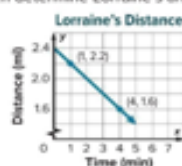
- The temperature in two different ovens increased at a steady rate. The temperature in oven A is represented by the equation  $y = 25x + 72$ , where  $x$  represents the number of minutes and  $y$  represents the temperature in degrees Fahrenheit. The temperature of oven B is shown in the graph. Compare the functions' initial values and rates of change. Then determine how much greater the temperature in oven B will be than oven A after 8 minutes. (Example 1)



# Practice..

**Test Practice**

- Open Response** Lorraine and Chila were riding their bikes to school. Lorraine's distance away from the school is shown in the graph. Chila's distance away from the school is shown in the table. Compare the functions' initial values and rates of change. Then determine Lorraine's and Chila's distance from school after 7 minutes. (Example 2)



**Chila's Distance**

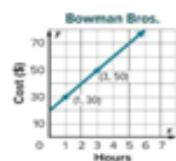
Time (min), x	Distance (mi), y
1	1.5
2	1.3
3	1.1

- Samuel is planning a walking tour of his city and is researching three different tour-guide companies. The cost  $y$  of each company is a linear function of the number of hours  $x$  that someone spends on the tour. The prices for three different companies are shown. Samuel plans his tour for 6 hours and wants to spend the lesser amount of money. From which company should he choose to do his walking tour?

**Hidden Treasures Walking Tour**  
 $y = 9x + 25$

**Road-Less-Traveled Tours**

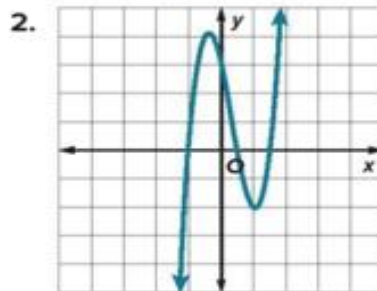
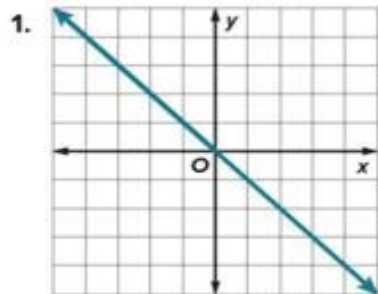
Hours, x	Cost (\$), y
1	12
2	24



## Practice..

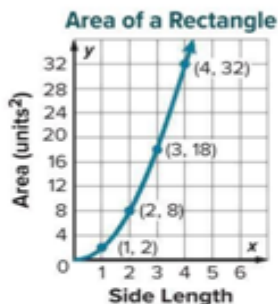
Determine whether each graph represents a linear or nonlinear function.

Explain. (Example 1)



## Practice..

3. A rectangle has side lengths  $s$  and  $2s$ . Its area is represented by the expression  $2s^2$ . The area of the rectangle is a function of its side length. Does this situation represent a linear or nonlinear function? Explain. (Example 2)



Determine whether each table represents a linear or nonlinear function.

Explain. (Example 3)

4.

Number of Items Sold, $x$	Total Earned (\$), $y$
1	25
2	45
3	60

5.

Time (min), $x$	Distance (mi), $y$
15	2.2
30	4.4
45	6.6

## Practice..

PG.303

5.5

Determine whether each equation represents a linear or nonlinear function.

Explain. (Examples 4 and 5)

6.  $y + 7x = 2$

7.  $y = \sqrt{8x}$

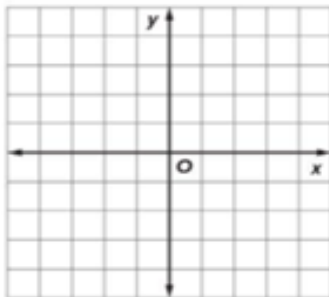
## Practice..

6.1

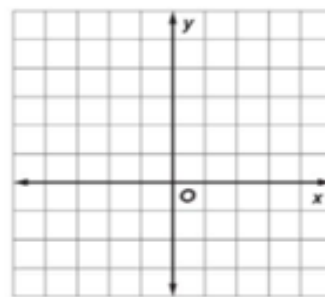
PG.329

Solve each system of equations by graphing. Check the solution. (Examples 1–4)

1.  $y = x + 4$   
 $y = -2x - 2$



2.  $y - \frac{1}{2}x = -1$   
 $y = \frac{1}{2}x + 4$



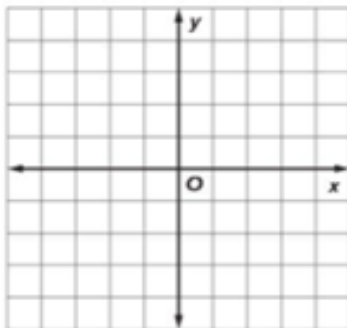
## Practice..

6.1

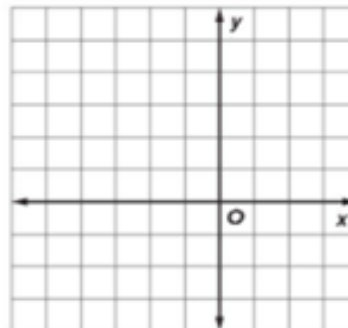
PG.329

Solve each system of equations by graphing. Check the solution. (Examples 1–4)

3.  $y + \frac{1}{4}x = 1$   
 $y = -\frac{1}{4}x + 1$

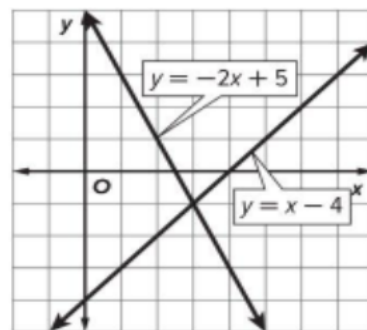


4.  $x = -3$   
 $y = 5$



## Test Practice

5. **Grid** The graph of a system of equations is shown. Plot and label the solution of the system on the graph.



## Practice..

6.2 PG.339-340

Determine if each system of equations has *no solution*, *one solution*, or an *infinite number of solutions*. (Examples 1–3)

1.  $-5x + y = -1$   
 $-5x + y = 10$

2.  $y = -4x + 9$   
 $y = \frac{2}{3}x - 5$

3.  $y + 1 = 3x$   
 $2y = 6x - 2$

4.  $y = -\frac{4}{5}x$   
 $4x + 5y = 0$

5.  $y = \frac{1}{2}x + 6$   
 $2y = x - 8$

6.  $y = -2x$   
 $y = x + 3$

## Practice..

6.3 PG.349

Solve each system of equations by substitution. Check the solution.

(Examples 1–5)

1.  $y = x - 14$   
 $y = -6x$

2.  $x - y = -5$   
 $x - y = \frac{1}{3}$

3.  $y + 7 = 2x$   
 $2y = 4x - 14$

## Practice..

6.4 PG.361

Solve each system of equations by elimination. Check the solution.

(Examples 1–4)

1.  $-6x + y = -3$   
 $5x - 2y = -8$

2.  $-3x + 12y = 18$   
 $-6x + 24y = 36$

3.  $-5x - 2y = -12$   
 $3x + 2y = 8$

## Practice..

6.5 PG.373

Write and solve a system of equations that represents each situation. Interpret the solution. (Examples 1–4)

1. The sum of two numbers is 20.5. Their difference is 6.5. Find the two numbers.

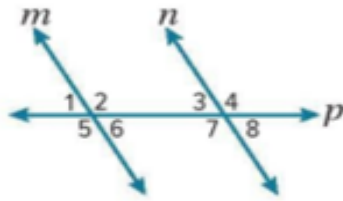
2. Tadeo volunteered at the library 6 times as many hours over the weekend as Dylan. Together, they volunteered a total of 14 hours. How many hours did each person volunteer over the weekend?



## Practice..

For Exercises 1–4, use the figure at the right. In the figure, line  $m$  is parallel to line  $n$ . For each pair of angles, classify the relationship in the figure as *alternate interior*, *alternate exterior*, or *corresponding*. (Examples 1 and 2)

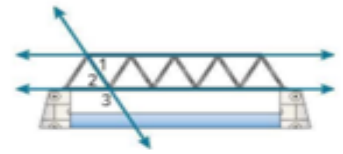
- $\angle 2$  and  $\angle 7$
- $\angle 1$  and  $\angle 3$
- $\angle 4$  and  $\angle 5$
- $\angle 5$  and  $\angle 7$



7.1

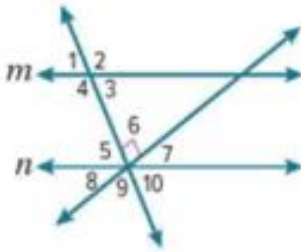
PG.391

- Arturo is designing a bridge for science class using parallel supports for the top and bottom beam. Find  $m\angle 2$  and  $m\angle 3$  if  $m\angle 1 = 60^\circ$ . Justify your answer. (Example 3)



## Practice..

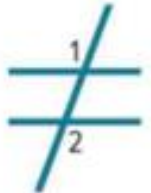
- In the figure, line  $m$  is parallel to line  $n$ . The measure of  $\angle 3$  is  $58^\circ$ . What is the measure of  $\angle 7$ ? (Example 4)



7.1

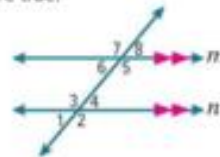
PG.391

- The symbol below is an equal sign with a slash through it. It is used to represent *not equal to* in math, as in  $x \neq 5$ . If  $m\angle 1 = 108^\circ$ , classify the relationship between  $\angle 1$  and  $\angle 2$ . Then find  $m\angle 2$ . Assume the equal sign consists of parallel lines.



### Test Practice

- Multiselect** In the figure, line  $m$  and line  $n$  are parallel. Select all of the statements that are true.



- $\angle 1$  and  $\angle 8$  are alternate exterior angles.
- $\angle 3$  and  $\angle 7$  are corresponding angles.
- $\angle 2$  and  $\angle 8$  are corresponding angles.
- $\angle 4$  and  $\angle 6$  are alternate interior angles.
- $\angle 5$  and  $\angle 7$  are corresponding angles.

## Practice..

7.2

PG.403

Find the value of  $x$  in each object. (Example 1)

1.

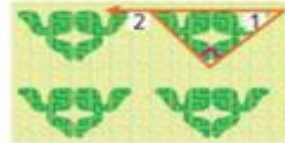


2.



3. In  $\triangle FGH$ , the measures of angles  $F$ ,  $G$ , and  $H$ , respectively, are in the ratio 4:4:10. Find the measure of each angle. (Example 2)

4. In the knitting pattern,  $m\angle 1 = 42^\circ$ . Find the measure of  $\angle 2$ . (Example 3)

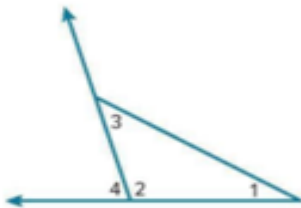


## Practice..

7.2

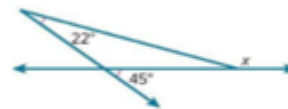
PG.403

5. In the figure,  $m\angle 4 = 74^\circ$  and  $m\angle 3 = 43^\circ$ . Find the measures of  $\angle 1$  and  $\angle 2$ . (Example 4)



### Test Practice

6. **Open Response** What is the measure of  $\angle x$ , in degrees, in the figure shown?

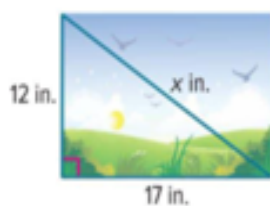


## Practice..

7.3

PG.415

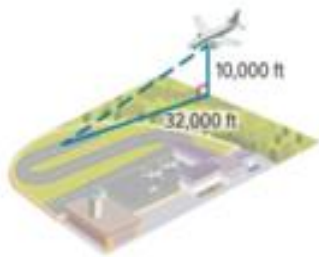
1. What is the length of a diagonal of a rectangular picture whose sides are 12 inches by 17 inches? Round to the nearest tenth. (Example 1)



3. The diagonal of a television measures 27 inches. If the width is 22 inches, calculate its height to the nearest inch. (Example 3)



2. How far is the airplane from the runway?  
Round to the nearest tenth. (Example 2)



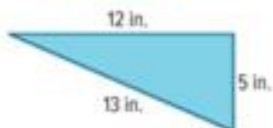
4. The distance from the top of the cone to the edge is 15 feet. The height of the cone is 6 feet. What is the radius of the cone?  
Round to the nearest tenth. (Example 4)



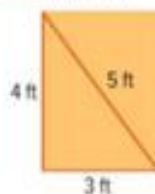
## Practice..

1. Three cities form a triangle. Tom measures the distances between the three cities on a map. The distances between the three cities are 45 miles, 56 miles, and 72 miles. Is the triangle formed by the three cities a right triangle? (Examples 1 and 2)

3. Allie wants to make sure that the pieces of cloth for a costume are right triangles. Determine whether the triangle is a right triangle. (Examples 1 and 2)



2. A carpenter is measuring a cabinet to ensure the sides create a right angle. Determine whether the triangle is a right triangle. (Examples 1 and 2)



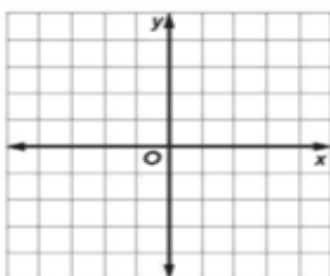
4. In order to ensure that the roof consists of right angles, an architect measures the diagonal to create a triangle. If the dimensions of the triangle are 9.5 feet, 16 feet, and 18.5 feet, is the triangle a right triangle? (Examples 1 and 2)

7.4 PG.421

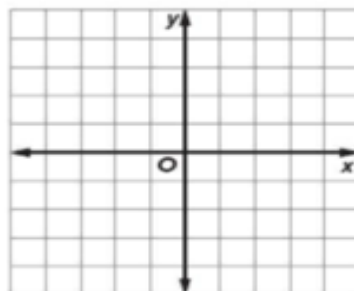
## Practice..

Find the distance,  $c$ , between each pair of points on the coordinate plane.  
Round to the nearest tenth if necessary. (Example 1)

1.  $(-4, -3), (2, 1)$



2.  $(0, 2), (5, -2)$



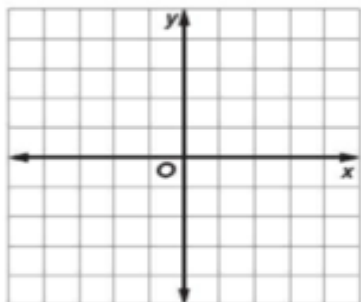
7.5 PG.427

## Practice..

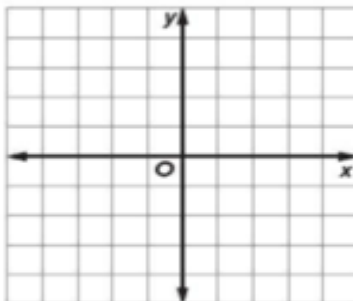
Find the distance,  $c$ , between each pair of points on the coordinate plane.

Round to the nearest tenth if necessary. (Example 1)

3.  $(0, 0), (-4, -3)$

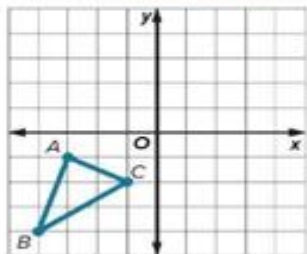


4.  $(-3, 4), (2, -3)$

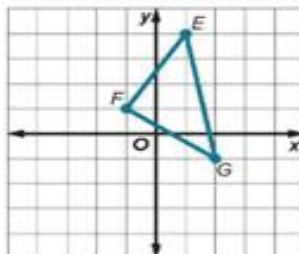


## Practice..

1. The graph of  $\triangle ABC$  is shown. Graph the image of  $\triangle ABC$  after a translation of 4 units right and 1 unit up. Write the coordinates of the image. (Example 1)



2. The graph of  $\triangle EFG$  is shown. Graph the image of  $\triangle EFG$  after a translation of 3 units left and 1 unit down. Write the coordinates of the image. (Example 1)



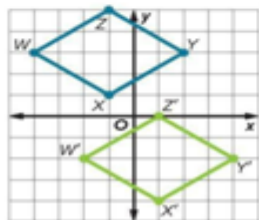
## Practice..

Triangle  $QRS$  has vertices  $Q(-2, 2)$ ,  $R(-3, -4)$ , and  $S(1, -2)$ . Write the coordinate notation for each translation given. Then write the coordinates of  $\triangle Q'R'S'$  after each translation. (Example 2)

3. 7 units right and 4 units down

4. 2 units left and 3 units up

5. The preimage and image of  $WXYZ$  are shown. Use coordinate notation to describe the translation. (Example 3)



### Test Practice

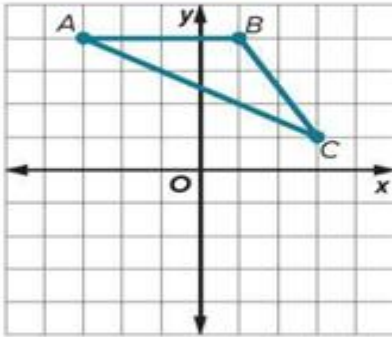
6. **Open Response** Triangle  $JKL$  has vertices  $J(-2, 2)$ ,  $K(-3, -4)$ , and  $L(1, -2)$ . Write the coordinate notation for a translation of 8 units right and 1 unit up.

## Practice..

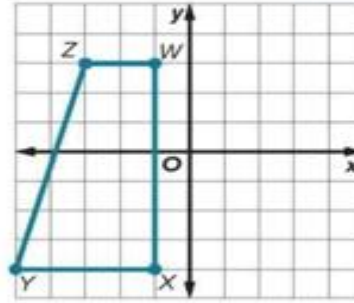
8.2

PG.453

1. The graph of  $\triangle ABC$  is shown. Graph the image of  $\triangle ABC$  after a reflection across the  $x$ -axis. Write the coordinates of the reflected image. (Example 1)



2. The graph of trapezoid  $WXYZ$  is shown. Graph the image of  $WXYZ$  after a reflection across the  $y$ -axis. Write the coordinates of the reflected image. (Example 1)

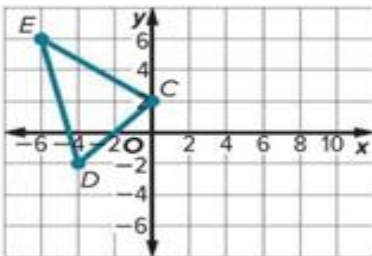


## Practice..

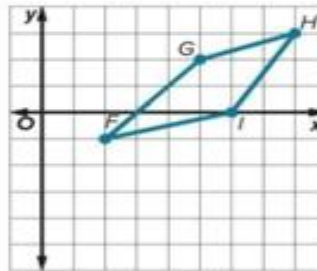
8.2

PG.453

3. The graph of  $\triangle CDE$  is shown. Graph the image of  $\triangle CDE$  after a reflection across the line  $x = 2$ . Include the line of reflection. Then write the coordinates of the image. (Example 2)



4. The graph of polygon  $FGHI$  is shown. Graph the image of  $FGHI$  after a reflection across the line  $y = -1$ . Include the line of reflection. Then write the coordinates of the image. (Example 2)

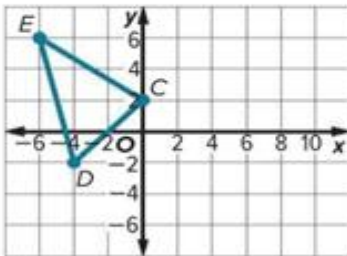


## Practice..

8.2

PG.453

3. The graph of  $\triangle CDE$  is shown. Graph the image of  $\triangle CDE$  after a reflection across the line  $x = 2$ . Include the line of reflection. Then write the coordinates of the image. (Example 2)



4. The graph of polygon  $FGHI$  is shown. Graph the image of  $FGHI$  after a reflection across the line  $y = -1$ . Include the line of reflection. Then write the coordinates of the image. (Example 2)

