تم تحميل هذا الملف من موقع المناهج الإماراتية

حل الوحدة الثالثة عشرة Geometry الهندسة منهج ريفيل

تاريخ إضافة الملف على موقع المناهج: 2024-05-10 18:00:36

التواصل الاجتماعي بحسب الصف الخامس

اضغط هنا للحصول على جميع روابط "الصف الخامس"

روابط مواد الصف الخامس على تلغرام

التربية الاسلامية	اللغة العربية	اللغة الانجليزية	الرياضيات

المزيد من الملفات بحسب الصف الخامس والمادة رياضيات في الفصل الثالث

1	حل الوحدة الثانية عشرة data and Measurement القياس والبيانات منهج ريفيل
2	كتاب الطالب منهج ريفيل
3	الدروس المقررة في المادة منهج بريدج بعد التعديل
4	حل الوحدة الحادية عشرة Fractions Divide قسمة الكسور منهج ريفيل

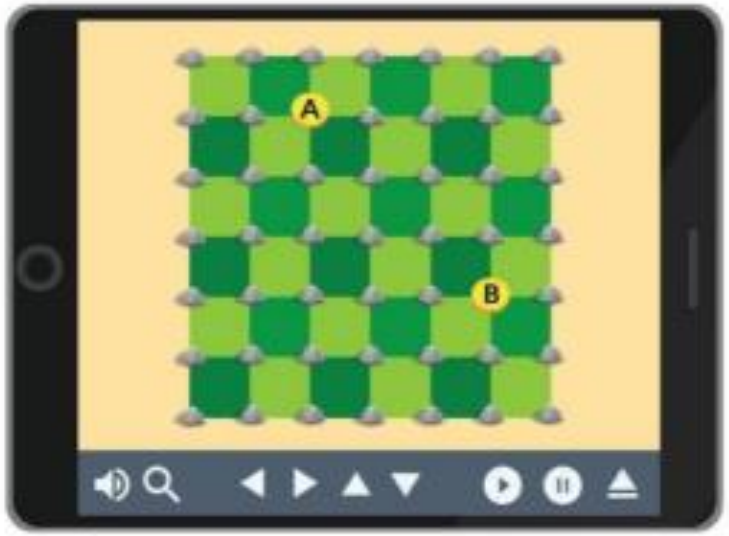
المزيد من الملفات بحسب الصف الخامس والمادة رياضيات في الفصل الثالث	
5	مراجعة الوحدة الحادية عشرة review 11 Unit

Lesson 13-1

Understand the Coordinate Plane

Be Curious

What do you notice?
What do you wonder?



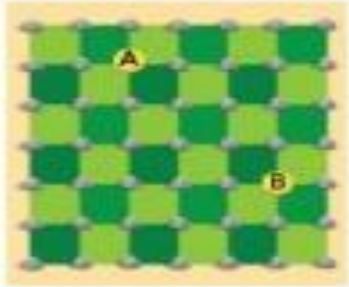
Math is... Mindset

How can working as a team help you achieve your goal?

Learn

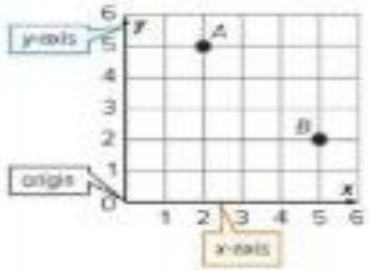
Erika designed a game that is played on this grid.

How can you describe the locations of *A* and *B*?

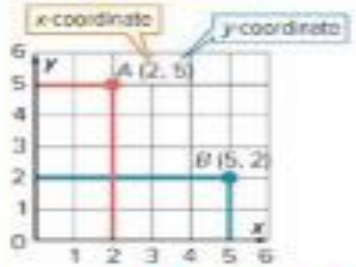


You can use the **coordinate** plane to describe the locations of *A* and *B*.

The coordinate plane has a horizontal number line called the **x-axis** and a vertical number line called the **y-axis**. The two lines intersect at the **origin**.



An **ordered pair** describes each point on the coordinate plane. An ordered pair has an **x-coordinate** and a **y-coordinate**.



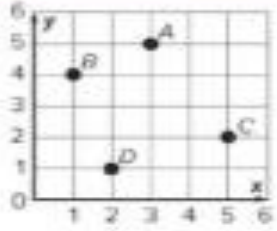
Math is... Explaining

Why does an ordered pair need to be ordered?

Work Together

What ordered pairs describe points *A*, *B*, *C*, and *D*?

***A*(3, 5), *B*(1, 4), *C*(5, 2), *D*(2, 1)**

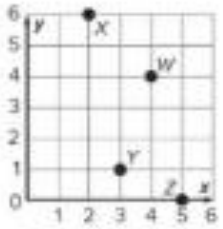


On My Own

MATH REPLAY | GO ONLINE

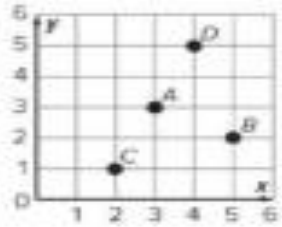
Name _____

Use the coordinate plane to answer exercises 1–7.



1. What ordered pair describes point *W*?
   (4, 4)
2. What ordered pair describes point *X*?
   (2, 6)
3. What ordered pair describes point *Y*?
   (3, 1)
4. What ordered pair describes point *Z*?
   (5, 0)
5. What ordered pair describes the origin?
   (0, 0)
6. How did you find the *x*-coordinate for each ordered pair?
   Sample answer: I drew a line from the point to where it intersects with the *x*-axis and found the *x*-coordinate.
7. How did you find the *y*-coordinate for each ordered pair?
   Sample answer: I drew a line from the point to where it intersects with the *y*-axis and found the *y*-coordinate.

Charlie gave his friends these locations for a scavenger hunt. What are the ordered pairs that describe the locations on the coordinate plane?



8. Point *A* **(3, 3)**
9. Point *B* **(5, 2)**
10. Point *C* **(2, 1)**
11. **Error Analysis** Charlie tells his friends that point *D* is at (5, 4). His friends go to the wrong spot. Explain why.
    Sample answer: He put the coordinates in the wrong order. The ordered pair for point *D* should be (4, 5).
12. **Extend Your Thinking** A new point, *E*, is two units from point *A*. Give two possible ordered pairs for *E*.
    Sample answer: (3, 5) or (1, 3).

Reflect

How can you determine the ordered pair that describes a point on the coordinate plane?

Answers may vary.

Math is... Mindset

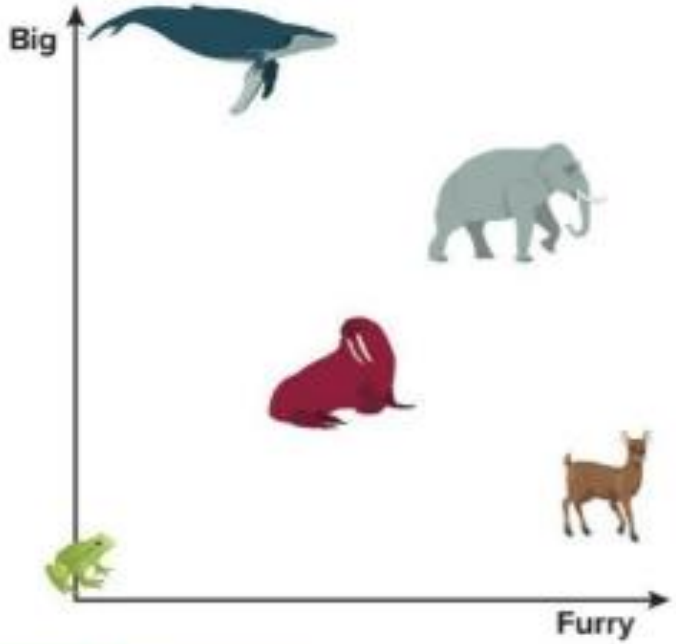
How did working as a team help you achieve your goal?

Lesson 13-2

Plot Ordered Pairs on the Coordinate Plane

Be Curious

What do you notice?
What do you wonder?



Math is... Mindset

How can being flexible in your thinking help you make good decisions?

Learn

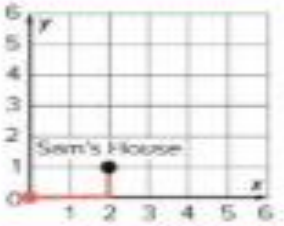
How can you determine the location of Sam's House and School on a coordinate plane?

Place	Ordered Pair
Sam's House	(2, 1)
School	(5, 5)
Park	(2, 5)
Jeremy's House	(5, 1)

The *x*-coordinate for Sam's House is 2. Start at the origin and go right 2 units on the *x*-axis.

The *y*-coordinate for Sam's House is 1; go up 1 unit.

Draw the point at (2, 1) and label it "Sam's House."



You can follow the same process to plot the point (5, 5) for School.

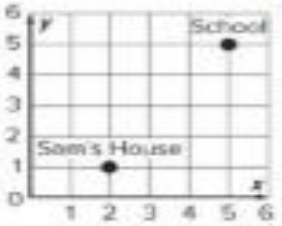
Math is... Choosing Tools

How many units right and up do you go to get from Sam's House to School?

Work Together

What steps would you take to plot the points for the Park and Jeremy's House?

Sample answer: From the origin, go right 2 and up 5 and label Park; from the origin, go right 5 and up 1 and label Jeremy's House.



On My Own

Name _____

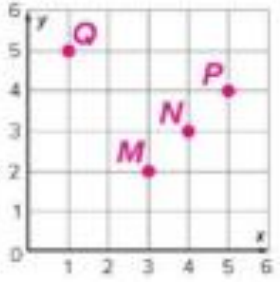
Plot and label the point for each place shown in the table.

Place	Ordered Pair
Playground	(4, 6)
Post Office	(1, 2)
Fire Station	(5, 3)
Jill's House	(2, 4)

1. Playground
2. Post Office
3. Fire Station
4. Jill's House

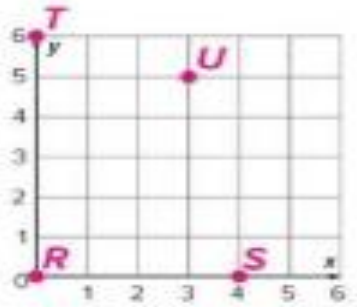
Plot and label the point for each ordered pair.

5. $M(3, 2)$
6. $N(4, 3)$
7. $P(5, 4)$
8. $Q(1, 5)$



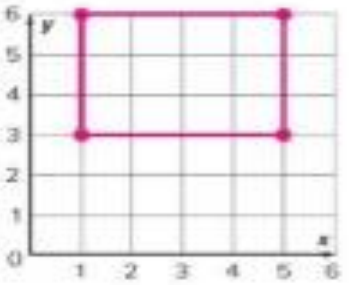
Plot and label the point for each ordered pair.

9. $R(0, 0)$
10. $S(4, 0)$
11. $T(0, 6)$
12. $U(3, 5)$



13. **Extend Your Thinking** Plot the points (1, 3), (1, 6), (5, 6), and (5, 3). Draw a line to connect the points in the order in which you plotted them. What is the length and width of the shape?

length is 4 units; width is 3 units



Reflect

How can you plot points on the coordinate plane when given an ordered pair?

Answers may vary.

Math is... Mindset

How has being flexible in your thinking helped you make good decisions?

Lesson 13-3

Represent Problems on a Coordinate Plane

Be Curious

What questions could you ask?

Math is... Mindset

What strategies help you work more efficiently?

Learn

Aliyah is at the 30th floor of a building. While waiting for the elevator, she collected the data shown in the table.

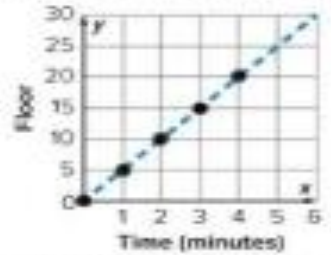
Time (min)	Floor
0	0
1	5
2	10
3	15
4	20

How many minutes will it take the elevator to reach Aliyah's floor?

You can write the times and corresponding location of the elevator as ordered pairs.

Ordered Pair
(0, 0)
(1, 5)
(2, 10)
(3, 15)
(4, 20)

Then, plot the ordered pairs on the coordinate plane. Draw a line to show the pattern.



It will take 6 minutes for the elevator to reach Aliyah's floor.

You can interpret points on the coordinate plane.

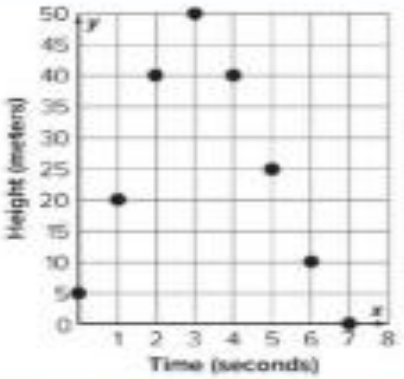
Math is... Modeling

How does plotting points on the coordinate plane help you understand data?

Work Together

This graph represents the beginning of a rollercoaster ride. What do you think happened between 2 seconds and 4 seconds?

Sample answer: The rollercoaster was climbing, and then dropped.



On My Own

MATH REPLAY | GO ONLINE

Name _____

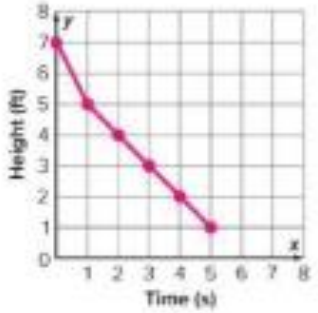
1. The table shows the time it took for a fifth-grade student to go down the slide at a park and their height from the ground while going down the slide. Write the time and corresponding heights as ordered pairs.

(0, 7); (1, 5); (2, 4); (3, 3); (4, 2); (5, 1)

Time (seconds)	Height (feet)
0	7
1	5
2	4
3	3
4	2
5	1

2. Plot and connect the points on a coordinate plane.

Check students' work.



3. How tall is the slide?

7 feet tall

4. How long does it take for the student to go down the slide?

5 seconds

5. What happens between 0 seconds and 1 second?

The student goes down 2 feet.

6. Where is the student after 5 seconds?

1 foot off the ground

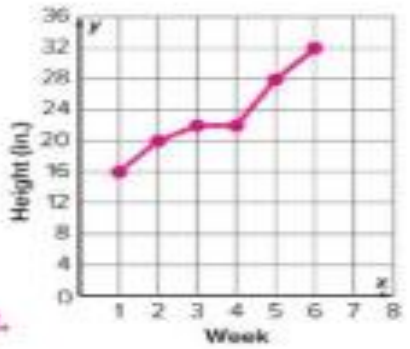
7. **STEM Connection** Poppy measures the height of a plant over several weeks and records it in the table. The plant is 14 inches tall before she begins recording. Write the weeks and corresponding heights as ordered pairs.

(1, 16); (2, 20); (3, 22); (4, 22); (5, 28); (6, 32)

Week	Height (inches)
1	16
2	20
3	22
4	22
5	28
6	32

8. Plot and connect the points on the coordinate plane.

Check students' work.



9. How much does the plant grow between Weeks 1 and 2?

4 inches

10. What happens between Weeks 3 and 4?

The plant remains the same height.

11. How much does the plant grow between before Poppy begins recording and Week 6?

18 inches

12. **Extend Your Thinking** What are some real-world situations you could interpret from points represented on a coordinate plane?

Sample answers: growth of students' height over time, distance a car travels on a road trip per day

Reflect

How are data presented on a coordinate plane helpful for understanding real-world situations?

Answers may vary.

Math is... Mindset

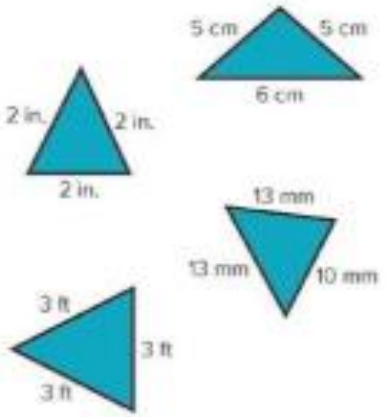
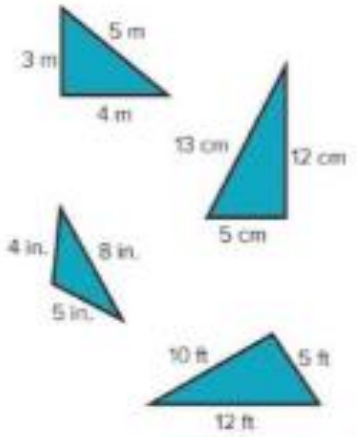
What strategies helped you work more efficiently?

Lesson 13-4

Classify Triangles by Properties

Be Curious

What could the question be?

Examples	Non-Examples
	

Math is... Mindset

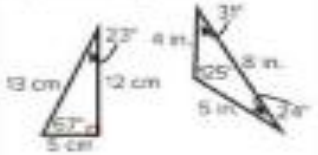
How do your skills or interests help you with your work?

Learn

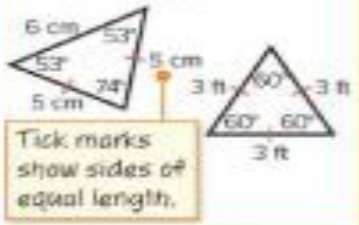
What are some ways you can classify triangles?

You can sort the triangles into **categories** based on their **properties**.

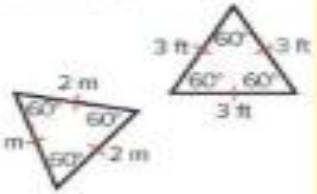
Scalene triangles have no sides of equal length.



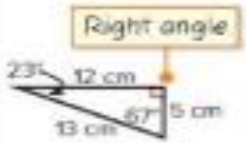
Isosceles triangles have at least two sides of equal length.



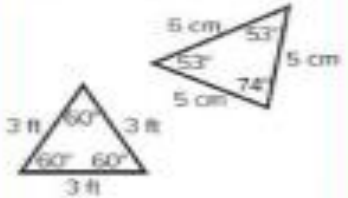
Equilateral triangles have 3 sides of equal length.



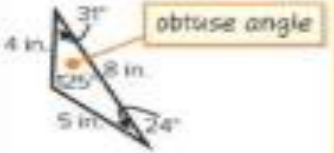
Right triangles have one right angle.



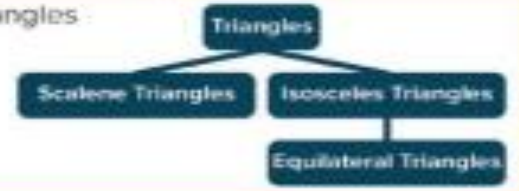
Acute triangles have 3 acute angles.



Obtuse triangles have one obtuse angle.



You can represent the categories of triangles as a **hierarchy** with **subcategories**.



Math is... Explaining

Why is an equilateral triangle also an isosceles triangle?

Work Together

Are the following statements *always true*, *sometimes true*, or *never true*? Explain. **Check students' explanations.**

An acute triangle is an equilateral triangle. **sometimes true**

An isosceles right triangle is an isosceles triangle. **always true**

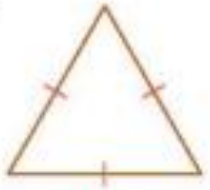
On My Own

Name _____

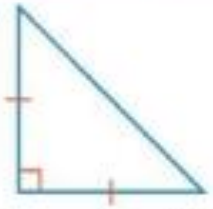
Classify each triangle by using their properties.

1.

isosceles; acute

2. 

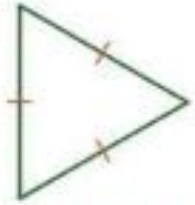
equilateral or isosceles; acute

3. 

isosceles; right

4.

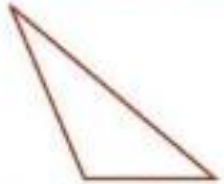
scalene; obtuse

5. 

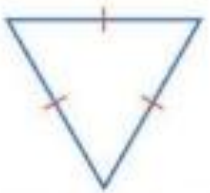
equilateral; acute

6.

isosceles; acute

7. 

scalene; obtuse

8. 

equilateral or isosceles; acute

9. What is a property of all triangles?

They are closed polygons with 3 sides.

10. What is a property of scalene triangles?

They have 3 sides of 3 different lengths.

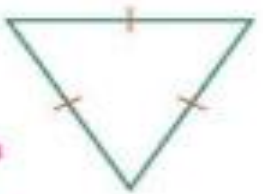
11. What is a property of isosceles triangles?

They have at least 2 sides of the same length.

12. What is a property of equilateral triangles?

They have 3 sides of the same length.

13. **Error Analysis** Tina categorizes this triangle as an equilateral triangle and says it cannot be categorized as an isosceles triangle. How can you help Tina correct her thinking?



Sample answer: An equilateral triangle is a subcategory of an isosceles triangle, so it goes in both the category and subcategory.

14. **Extend Your Thinking** Draw examples of an isosceles triangle, an equilateral triangle, and a scalene triangle. Use tick marks to show sides of the same length.

Check students' drawings.

Reflect

How can knowing the properties of triangles be helpful when classifying triangles?

Answers may vary.

Math is... Mindset

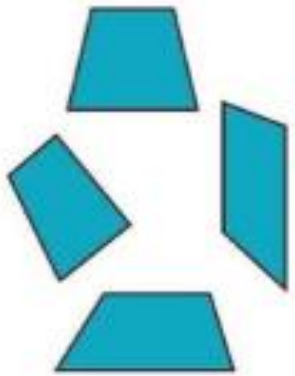
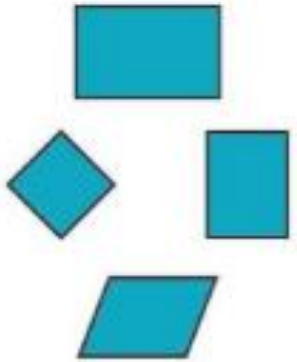
How did your skills or interests help you with your work today?

Lesson 13-5

Properties of Quadrilaterals

Be Curious

What could the question be?

Examples	Non-Examples
	

Math is... Mindset

How do you show that you understand your partner's point of view?

Learn

How many different kinds of quadrilaterals can you make with line segment *AB* as one of the sides?

You can identify quadrilaterals by their properties.

A trapezoid is a quadrilateral with exactly one pair of parallel sides.

This mark shows this side is parallel to the other side having the same mark.

A parallelogram is a quadrilateral with two pairs of parallel sides.

A rectangle is a parallelogram with four right angles.

A rhombus is a parallelogram with four sides of equal length.

A square is a parallelogram with four sides of equal length and four right angles.

You can make 5 different kinds of quadrilaterals.

Math is... Structure

How can you compare the properties of quadrilaterals and triangles?

Work Together

What are the properties of a square?

Sample answer: A square is a parallelogram with 4 sides that has 2 pairs of parallel sides, 4 sides of equal length, and 4 right angles.

On My Own

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Name _____

Classify each figure by using their properties.

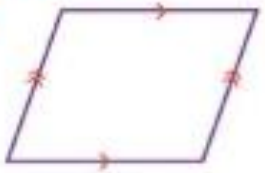
Sample answers provided.

1.

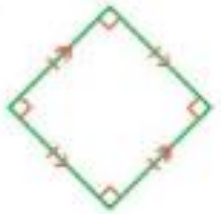
rectangle

2.

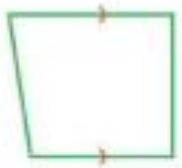
quadrilateral

3. 

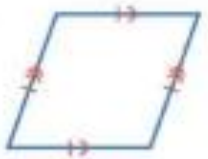
parallelogram

4. 

square

5. 

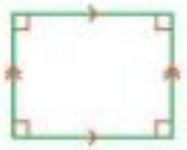
trapezoid

6. 

rhombus

7.

quadrilateral

8. 

rectangle

9. **STEM Connection** Sam is drawing a picture of a house he sees. One of the front windows has 2 sets of parallel sides, 4 right angles, and 2 sides of different lengths. What is the shape of the windows?

The windows are shaped like rectangles.

10. How is a square different from a rhombus?

A square has 4 right angles, while a rhombus does not.

11. How is a parallelogram different from a rhombus?

A parallelogram does not have 4 equal sides while a rhombus does.

12. What are the properties of a trapezoid?

A trapezoid is a polygon with 4 sides with 1 pair of parallel sides.

13. **Extend Your Thinking** How are all quadrilaterals the same? How are they different?

Sample answer: All quadrilaterals have 4 sides and 4 angles. They can differ in the number of equal side lengths, angle size, and number of parallel sides.

Reflect

How can knowing the properties of quadrilaterals help you identify quadrilaterals?

Answers may vary.

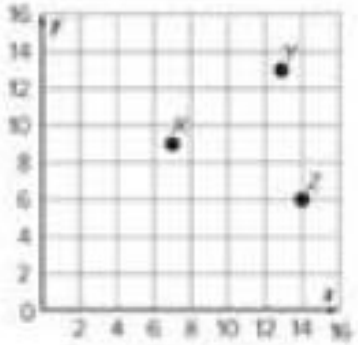
Math is... Mindset

How did you show that you understand your partner's point of view?

Unit 13

Ordered Pairs

Name _____



Circle the ordered pair that names the given point.

1. Point X
   a. (9, 7)
   b. (7, 9)
   c. (6, 7)
   d. (10, 8)
   e. None of the above

2. Point Y
   a. (9, 9)
   b. (9, 10)
   c. (13, 13)
   d. (10, 10)
   e. None of the above

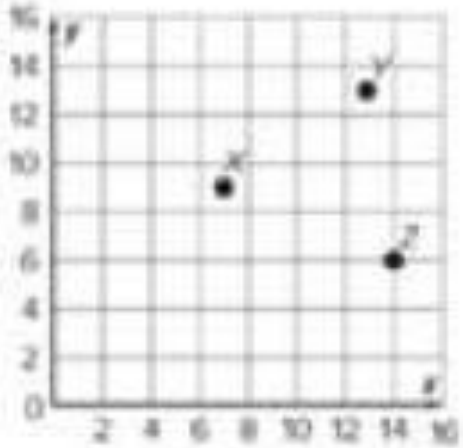
3. Point Z
   a. (14, 6)
   b. (9, 5)
   c. (6, 14)
   d. (5, 9)
   e. None of the above

Explain how you determined the ordered pairs in exercises 1–3.

4. Point X
   Explanations may vary.

5. Point Y
   Explanations may vary.

6. Point Z
   Explanations may vary.



7. **Which ordered pair, if plotted on the graph above, would create the fourth vertex of a parallelogram?**

   Circle the ordered pair that completes the parallelogram.
   a. (6, 2)
   b. (2, 8)
   c. (8, 2)
   d. (12, 2)
   e. None of the above

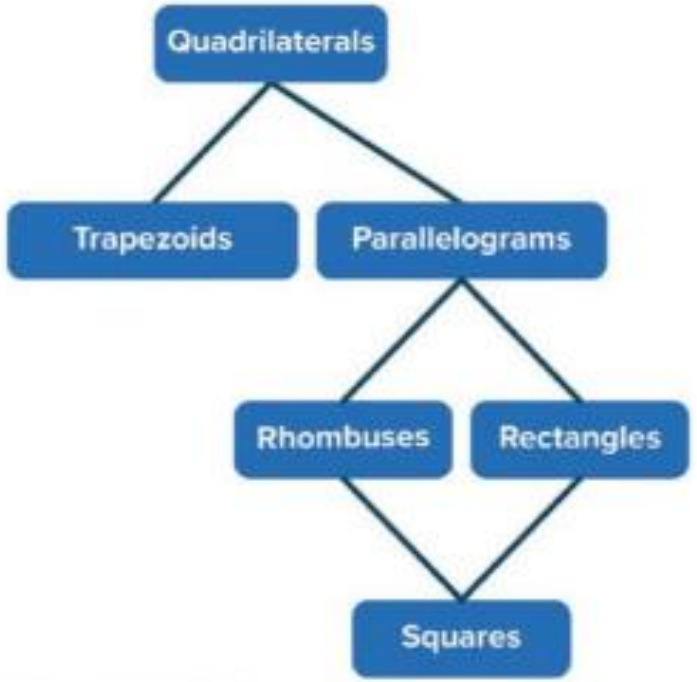
   Explain or show how you know.
   Explanations may vary.

Lesson 13-6

Classify Quadrilaterals by Properties

Be Curious

What do you notice?
What do you wonder?



Math is... Mindset

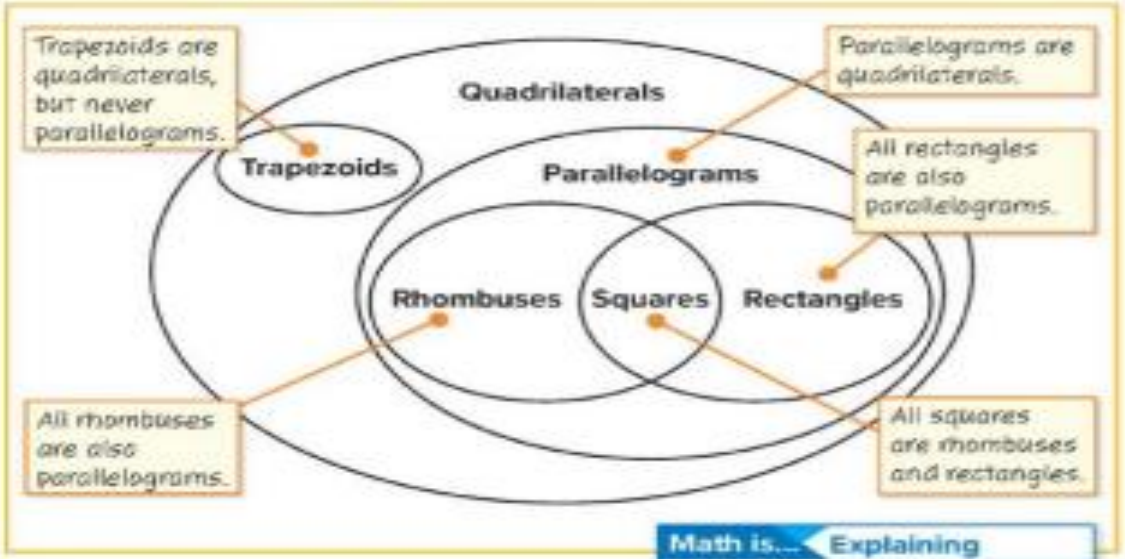
What helps you know that you have made good decisions?

Learn

How can you represent the different categories and subcategories of quadrilaterals?

Quadrilaterals can be classified into categories and subcategories based on their shared properties.

You can use a **Venn diagram** to show a hierarchy.



Math is... Explaining

How does the Venn diagram show the relationship among quadrilaterals?

Work Together

Are the following statements *always true*, *sometimes true*, or *never true*?

A trapezoid is a parallelogram. **never true**

A square is a rhombus. **always true**

On My Own

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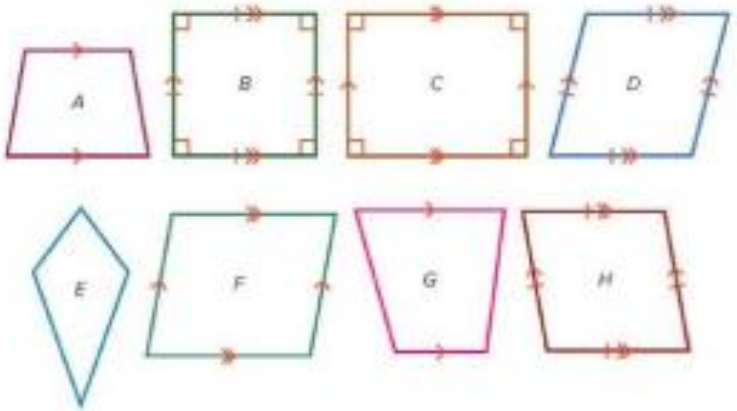
Name _____

Use the figures for Exercises 1–8. Identify the figures that could be classified into each subcategory.



1. quadrilaterals
Figures A, B, C, D, E, F, G, H

2. trapezoids
Figures A, G

3. parallelograms
Figures B, C, D, F, H

4. rectangles
Figures B, C

5. rhombuses
Figures B, D, H

6. squares
Figure B

7. How did you know how to classify each shape? Explain.
Sample answer: I classified the shapes based on number of parallel sides, number of sides of equal length, and number of right angles.

8. Did you classify any shapes into more than one category? If so, explain why. **Yes; Sample answer: All parallelograms are quadrilaterals so those shapes are in both categories; all rectangles are parallelograms so Shape C is in both categories; all rhombuses are parallelograms so those shapes are in both categories; and all squares are rhombuses so Shape B is in both categories.**

9. **STEM Connection** Hanna is helping cut some sheets of metal. She needs to cut them so that they have 4 sides with two pairs of parallel sides. Some need to have 4 right angles and some do not. How can she classify the sheets of metal?

The sheets with 4 right angles can be classified as rectangles and the sheets without right angles can be classified as parallelograms.

10. Which quadrilaterals always have 4 right angles?
squares and rectangles

11. Which quadrilaterals always have exactly 1 pair of parallel sides?
trapezoids

12. Which quadrilaterals always have 4 sides of equal length?
rhombuses and squares

13. **Extend Your Thinking** Why can a rectangle also be called a parallelogram?
A rectangle has all the properties of a parallelogram.

Reflect

How can knowing the hierarchy of quadrilaterals help you describe their properties?

Answers may vary.

Math is... Mindset

How did you know that you made good decisions?

Unit Review

Name _____

Vocabulary Review

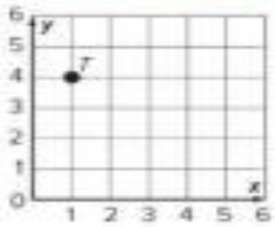
Choose the correct word(s) to complete each sentence.

coordinate plane	parallelogram	subcategory	*x*-axis
ordered pair	square	trapezoid	*y*-axis
origin			

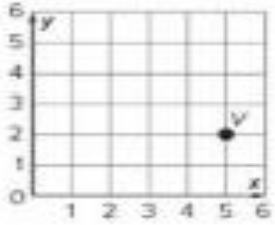
1. A **square** is a rectangle with four sides of equal length. (Lesson 13-5)
2. The **ordered pair** (2, 7) names the *x*-coordinate and *y*-coordinate of a point on the coordinate plane. (Lesson 13-1)
3. A **trapezoid** is a quadrilateral with exactly one pair of parallel sides. (Lesson 13-5)
4. The ***x*-axis** is the horizontal number line on the coordinate plane. (Lesson 13-1)
5. The ordered pair (0, 0) represents the **origin** of the coordinate plane. (Lesson 13-1)
6. A **subcategory** is a subset of shapes of a category that share a certain property. (Lesson 13-4)
7. The ***y*-axis** is the vertical number line on the coordinate plane. (Lesson 13-1)
8. The **coordinate plane** is formed by a horizontal number line and a vertical number line intersecting and forming a right angle. (Lesson 13-1)
9. A **parallelogram** is a quadrilateral with two pairs of parallel sides. (Lesson 13-5)

Review

10. What ordered pair represents point *T*? (Lesson 13-1) **(1, 4)**



11. What ordered pair represents point *V*? (Lesson 13-1) **(5, 2)**



12. What ordered pair represents the origin? (Lesson 13-1) **(0, 0)**

13. Which axis is used to find the *x*-coordinate? (Lesson 13-1)

the *x*-axis

14. Which axis is used to find the *y*-coordinate? (Lesson 13-1)

the *y*-axis

15. Plot each location on the coordinate plane. (Lesson 13-2)

Feature	Ordered Pair
Start of Trail	(0, 4)
Canoe Rental	(3, 2)
Stage	(4, 5)
Picnic Area	(4, 3)

16. What are the steps in plotting the point (3, 10) on the coordinate plane? (Lesson 13-2)

Go right 3 units on the *x*-axis. Next, go up 10 units and plot the point.

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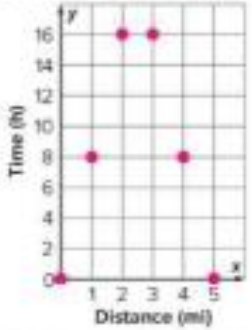
17. The table shows how far in miles Madison is from home at the beginning of each hour of her bike trip.

Time (hours)	Distance from Home (miles)
0	0
1	8
2	16
3	16
4	8
5	0

a. Where do the points for each distance Madison is from home belong on the coordinate plane? (Lesson 13-3)



b. What do you think Madison did between hour 2 and hour 3 of her bike trip? (Lesson 13-3)

Sample answer: She is not riding her bike, so maybe she is eating.

18. What property of triangles is used to classify scalene, isosceles, and equilateral triangles? How do you know? (Lesson 13-4)

the lengths of their 3 sides; A scalene has 3 different side lengths, an isosceles has at least 2 sides of the same length, and an equilateral has all three sides of the same length.

19. Select all the possible names for this figure. (Lesson 13-6)

A. parallelogram
B. rectangle
C. square
D. rhombus
E. trapezoid

20. Is a square always a rhombus? Is a rhombus always a square? How do you know? (Lesson 13-6)

A square is always a rhombus, but a rhombus is not always a square. Check students' explanations.

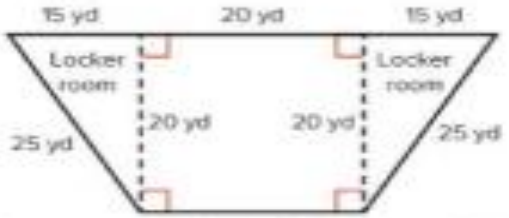
Performance Task

An architect is designing a new athletic center that includes both buildings and fields.

Part A: The architect started to draw a sketch of the soccer field. The length is 12 units, and the width is 8 units. What are the coordinates of the four corners of the soccer field?

(1, 1), (1, 9), (13, 9), (13, 1)

Part B: The indoor gym.



What are all of the names that describe the area that is **not** part of the locker rooms? How do you know?

parallelogram, rectangle, rhombus, square; it has 4 sides of equal length and 4 right angles.

Reflect

How can I use a hierarchy diagram to understand the properties of shapes?

Answers may vary.