EUREKA MATH

A STORY OF UNITS

Mathematics Curriculum

Grade 3 • MODULE 7

Geometry and Measurement Word Problems

PROBLEM SETS

Video tutorials: http://embarc.online

Version 3

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GRADE 3 • MODULE 7

Geometry and Measurement Word Problems

NOTE: Student sheets should be printed at 100% scale to preserve the intended size of figures for accurate measurements. Adjust copier or printer settings to *actual size,* and set page scaling to *none*.

Name _____ Date _____

Lena's family visits Little Tree Apple Orchard. Use the RDW process to solve the problems about Lena's visit to the orchard. Use a letter to represent the unknown in each problem.

1. The sign below shows information about hayrides at the orchard.

a. Lena's family buys 2 adult tickets and 2 child tickets for the hayride. How much does it cost Lena's family to go on the hayride?

b. Lena's mom pays for the tickets with $5 bills. She receives $3 in change. How many $5 bills does Lena's mom use to pay for the hayride?

c. Lena's family wants to go on the fourth hayride of the day. It's 11:38 now. How many minutes do they have to wait for the fourth hayride?

2. Lena picked 17 apples, and her brother picked 19. Lena's mom has a pie recipe that requires 9 apples. How many pies can Mom make with the apples that Lena and her brother picked?

3. Lena's dad gives the cashier $30 to pay for 6 liters of apple cider. The cashier gives him $6 in change. How much does each liter of apple cider cost?

4. The apple orchard has 152 apple trees. There are 88 trees with red apples. The rest of the trees have green apples. How many more trees have red apples than green apples?

Name _____ Date _____

Use the RDW process to solve. Use a letter to represent the unknown in each problem.

1. Leanne needs 120 tiles for an art project. She has 56 tiles. If tiles are sold in boxes of 8, how many more boxes of tiles does Leanne need to buy?

2. Gwen pours 236 milliliters of water into Ravi's beaker. Henry pours 189 milliliters of water into Ravi's beaker. Ravi's beaker now contains 800 milliliters of water. How much water was in Ravi's beaker to begin with?

3. Maude hung 3 pictures on her wall. Each picture measures 8 inches by 10 inches. What is the total area of the wall covered by the pictures?

4. Kami scored a total of 21 points during her basketball game. She made 6 two-point shots, and the rest were three-point shots. How many three-point shots did Kami make?

5. An orange weighs 198 grams. A kiwi weighs 85 grams less than the orange. What is the total weight of the fruit?

6. The total amount of rain that fell in New York City in two years was 282 centimeters. In the first year, 185 centimeters of rain fell. How many more centimeters of rain fell in the first year than in the second year?

Name _____ Date _____

Use the RDW process to solve the problems below. Use a letter to represent the unknown in each problem. When you are finished, share your solutions with a partner. Discuss and compare your strategies with your partner's strategies.

1. Monica measures 91 milliliters of water into 9 tiny beakers. She measures an equal amount of water into the first 8 beakers. She pours the remaining water into the ninth beaker. It measures 19 milliliters. How many milliliters of water are in each of the first 8 beakers?

2. Matthew and his dad put up 8 six-foot lengths of fence on Monday and 9 six-foot lengths on Tuesday. What is the total length of the fence?

3. The total weight of Laura's new pencils is 112 grams. One pencil rolls off the scale. Now the scale reads 105 grams. What is the total weight of 7 new pencils?

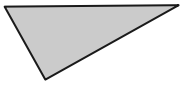
4. Mrs. Ford's math class starts at 8:15. They do 3 fluency activities that each last 4 minutes. Just when they finish all of the fluency activities, the fire alarm goes off. When they return to the room after the drill, it is 8:46. How many minutes did the fire drill last?

5. On Saturday, the baker bought a total of 150 pounds of flour in five-pound bags. By Tuesday, he had 115 pounds of flour left. How many five-pound bags of flour did the baker use?

6. Fred cut an 84-centimeter rope into 2 parts and gave his sister 1 part. Fred's part is 56 centimeters long. His sister cut her rope into 4 equal pieces. How long is 1 of his sister's pieces of rope?

Name _____ Date _____

1. Cut out all the polygons (A–L) in the Template. Then, use the polygons to complete the following chart.

Attribute	Write the letters of the polygons in this group.	Sketch 1 polygon from the group.
Example: **3 Sides**	Polygons: Y, Z	
4 Sides	Polygons:	
At Least 1 Set of Parallel Sides	Polygons:	
2 Sets of Parallel Sides	Polygons:	
4 Right Angles	Polygons:	
4 Right Angles and 4 Equal Sides	Polygons:	

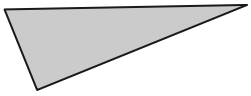
2. Write the letters of the polygons that are quadrilaterals. Explain how you know these polygons are quadrilaterals.

3. Sketch a polygon below from the group that has 2 sets of parallel sides. Trace 1 pair of parallel sides red. Trace the other pair of parallel sides blue. What makes parallel sides different from sides that are not parallel?

4. Draw a diagonal line from one corner to the opposite corner of each polygon you drew in the chart using a straightedge. What new polygon(s) did you make by drawing the diagonal lines?

Name _____ Date _____

1. Cut out all the polygons (M–X) in the Template. Then, use the polygons to complete the following chart.

Attribute	List polygons' letters for each group.	Sketch 1 polygon from the group.
Example: **3 Sides**	Polygons: Y, Z	
All Sides Are Equal	Polygons:	
All Sides Are Not Equal	Polygons:	
At Least 1 Right Angle	Polygons:	
At Least 1 Set of Parallel Sides	Polygons:	

2. Compare Polygon M and Polygon X. What is the same? What is different?

3. Jenny says, "Polygon N, Polygon R, and Polygon S are all regular quadrilaterals!" Is she correct? Why or why not?

4. "I have six equal sides and six equal angles. I have three sets of parallel lines. I have no right angles."

   a. Write the letter and the name of the polygon described above.

   b. Estimate to draw the same type of polygon as in part (a), but with no equal sides.

Name _____ Date _____

Use a ruler and a right angle tool to help you draw the figures with the attributes given below.

1. Draw a triangle with 1 right angle.

2. Draw a quadrilateral with 4 right angles and sides that are all 2 inches long.

3. Draw a quadrilateral with at least 1 set of parallel sides. Trace the parallel sides green.

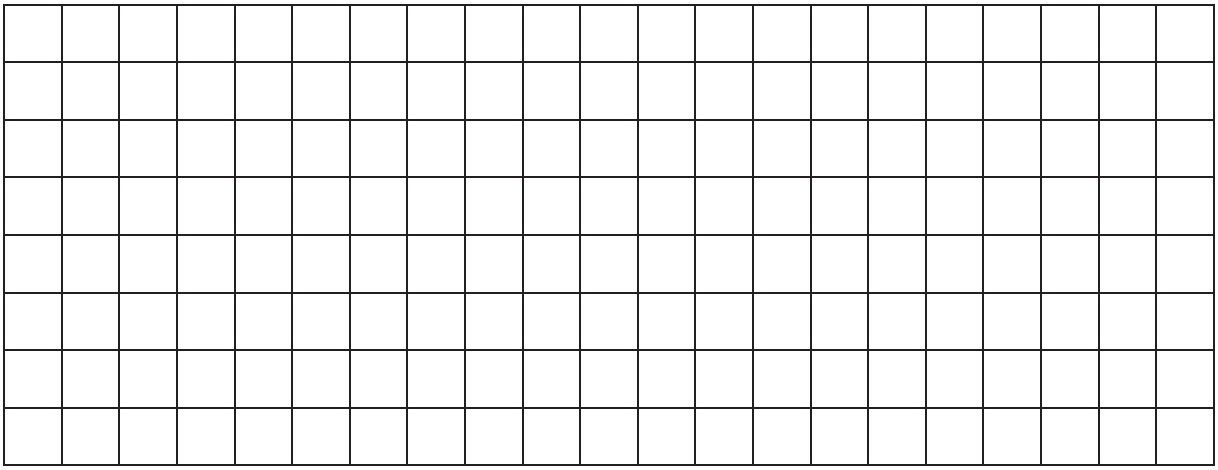
4. Draw a pentagon with at least 2 equal sides. Label the 2 equal side lengths of your shape.

5. Draw a hexagon with at least 2 equal sides. Label the 2 equal side lengths of your shape.

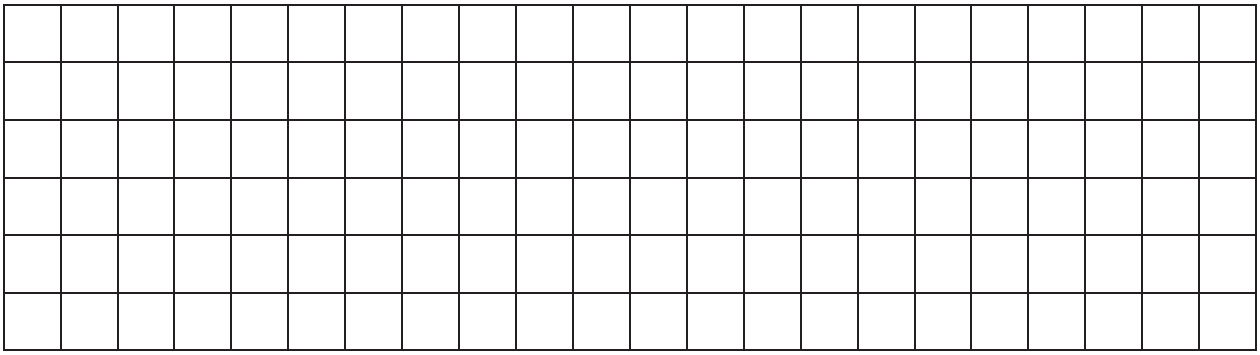
6. Sam says that he drew a polygon with 2 sides and 2 angles. Can Sam be correct? Use pictures to help you explain your answer.

Name _____ Date _____

1. Use tetrominoes to create at least two different rectangles. Then, color the grid below to show how you created your rectangles. You may use the same tetromino more than once.



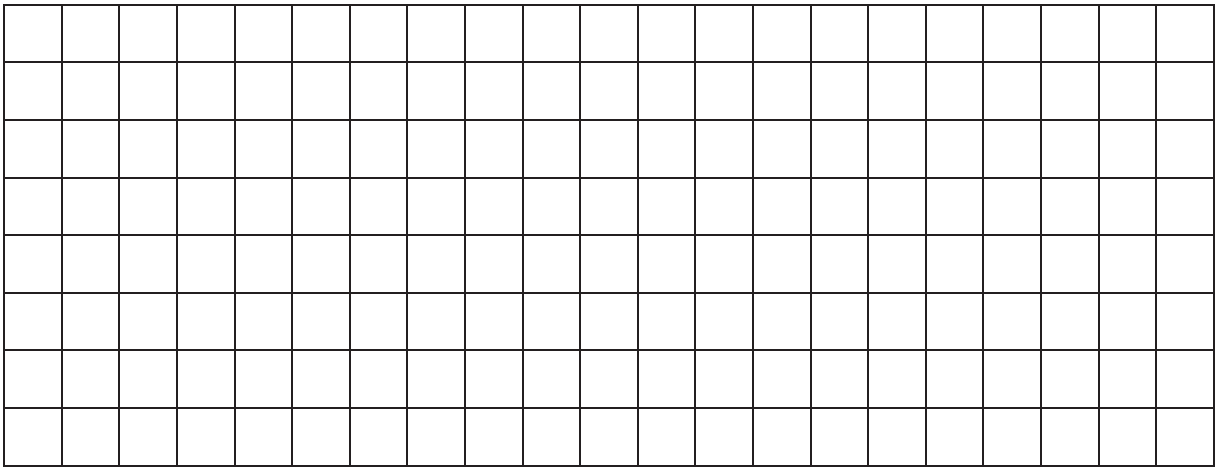
2. Use tetrominoes to create at least two squares, each with an area of 36 square units. Then, color the grid below to show how you created your squares. You may use the same tetromino more than once.



a. Write an equation to show the area of a square above as the sum of the areas of the tetrominoes you used to make the square.

b. Write an equation to show the area of a square above as the product of its side lengths.

3. a. Use tetrominoes to create at least two different rectangles, each with an area of 12 square units. Then, color the grid below to show how you created the rectangles. You may use the same tetromino more than once.



b. Explain how you know the area of each rectangle is 12 square units.

4. Marco created a rectangle with tetrominoes and traced its outline in the space below. Use tetrominoes to re-create it. Estimate to draw lines inside the rectangle below to show how you re-created Marco's rectangle.

Name _____ Date _____

1. Fold and cut the square on the diagonal. Draw and label your 2 new shapes below.

2. Fold and cut one of the triangles in half. Draw and label your 2 new shapes below.

3. Fold twice, and cut your large triangle. Draw and label your 2 new shapes below.

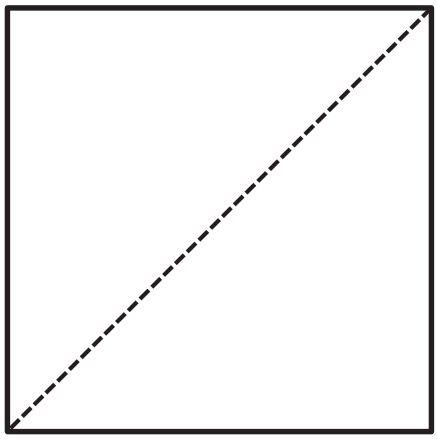
4. Fold and cut your trapezoid in half. Draw and label your 2 new shapes below.

5. Fold and cut one of your trapezoids. Draw and label your 2 new shapes below.

6. Fold and cut your second trapezoid. Draw and label your 2 new shapes below.

7. Reconstruct the original square using the seven shapes.

   a. Draw lines inside the square below to show how the shapes go together to form the square. The first one has been done for you.



   b. Describe the process of forming the square. What was easy, and what was challenging?

Name _____ Date _____

1. Use at least two tangram pieces to make and draw two of each of the following shapes. Draw lines to show where the tangram pieces meet.

   a. A rectangle that does not have all equal sides.

   b. A triangle.

   c. A parallelogram.

   d. A trapezoid.

2. Use your two smallest triangles to create a square, a parallelogram, and a triangle. Show how you created them below.

3. Create your own shape on a separate sheet of paper using all seven pieces. Describe its attributes below.

4. Trade your outline with a partner to see if you can re-create her shape using your tangram pieces. Reflect on your experience below. What was easy? What was challenging?

Name _____ Date _____

1. Use a 2-inch square to answer the questions below.

   a. Trace the square in the space below with a red crayon.

   b. Trace the new shape you made with the square in the space below with a red crayon.

   c. Which shape has a greater perimeter? How do you know?

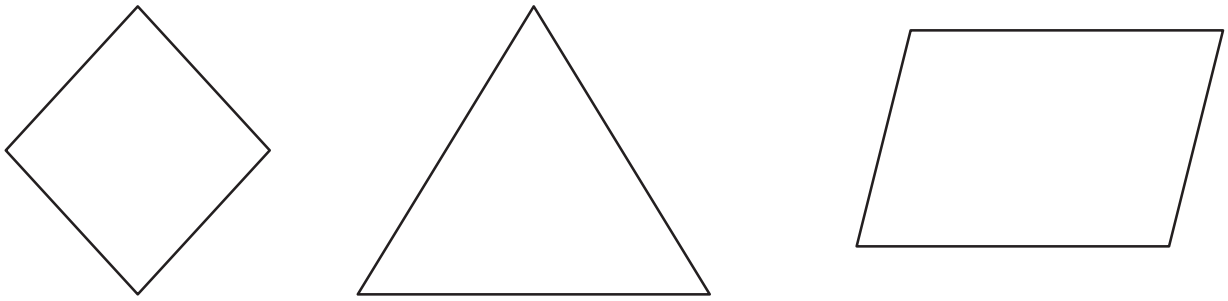
   d. Color the inside of the shapes in Problem 1 (a) and (b) with a blue crayon.

e. Which color represents the perimeters of the shapes? How do you know?

f. What does the other color represent? How do you know?

g. Which shape has a greater area? How do you know?

2. a. Outline the perimeter of the shapes below with a red crayon.



b. Explain how you know you outlined the perimeters of the shapes above.

3. Outline the perimeter of this piece of paper with a highlighter.

Name _____ Date _____

1. Follow the directions below using the shape you created yesterday.
   a. Tessellate your shape on a blank piece of paper.
   b. Color your tessellation to create a pattern.
   c. Outline the perimeter of your tessellation with a highlighter.
   d. Use a string to measure the perimeter of your tessellation.

2. Compare the perimeter of your tessellation to a partner's. Whose tessellation has a greater perimeter? How do you know?

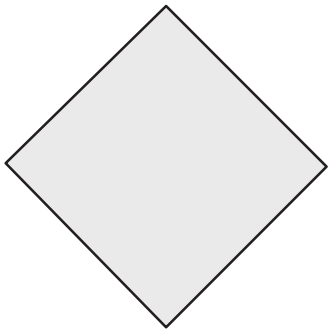
3. How could you increase the perimeter of your tessellation?

4. How would overlapping your shape when you tessellated change the perimeter of your tessellation?

Name _____ Date _____

1. Measure and label the side lengths of the shapes below in centimeters. Then, find the perimeter of each shape.

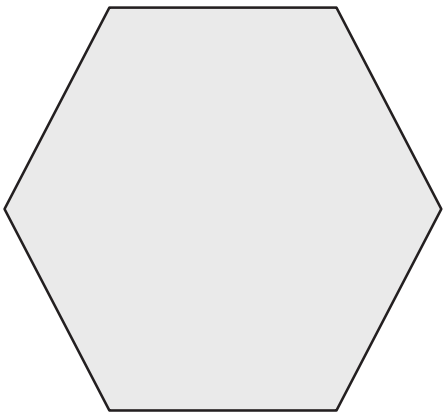
a.



Perimeter = _____cm +_____cm +_____cm +_____cm

= _____ cm

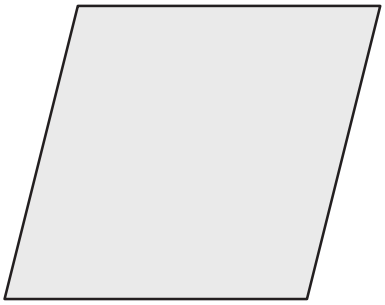
b.



Perimeter = _____

= _____ cm

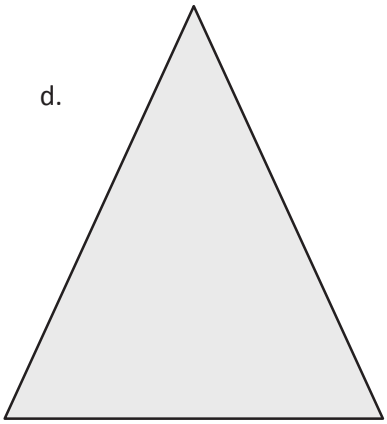
c.



Perimeter = _____

= _____ cm

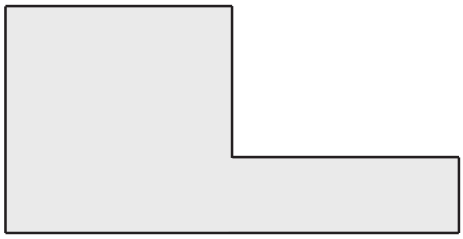
d.



Perimeter = _____

= _____ cm

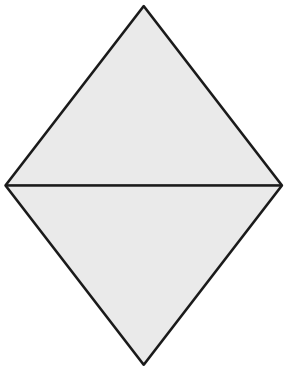
e.



Perimeter = _____

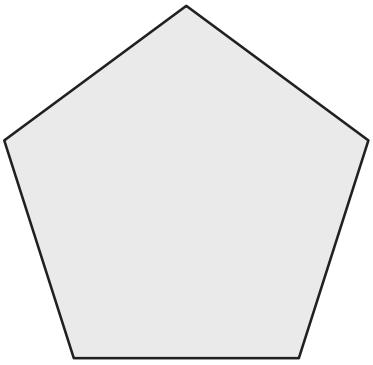
= _____ cm

2. Carson draws two triangles to create the new shape shown below. Use a ruler to find the side lengths of Carson's shape in centimeters. Then, find the perimeter.

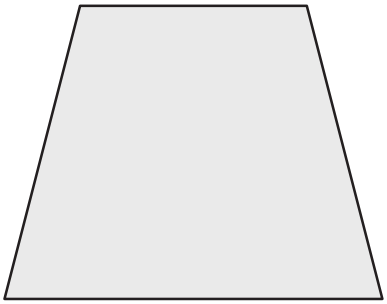


3. Hugh and Daisy draw the shapes shown below. Measure and label the side lengths in centimeters. Whose shape has a greater perimeter? How do you know?

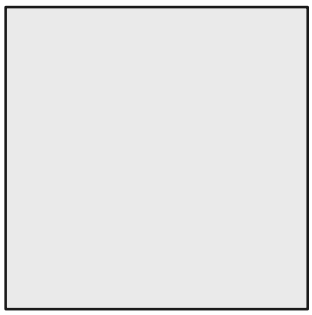
Hugh's Shape



Daisy's Shape



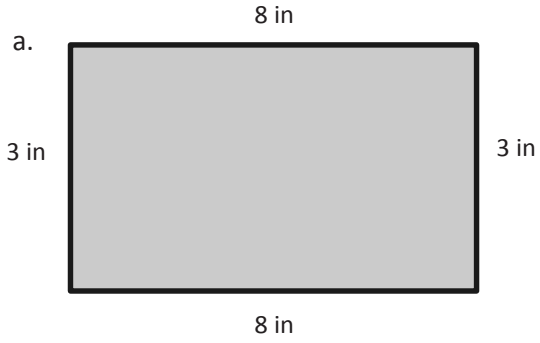
4. Andrea measures one side length of the square below and says she can find the perimeter with that measurement. Explain Andrea's thinking. Then, find the perimeter in centimeters.



Name _____ Date _____

1. Find the perimeter of the following shapes.

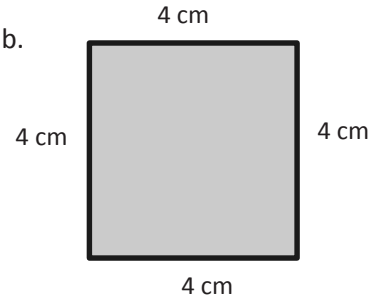
a.



P = 3 in + 8 in + 3 in + 8 in

= _____ in

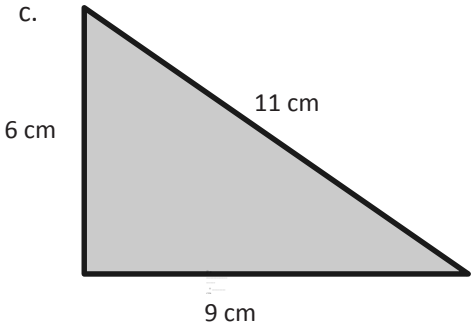
b.



P = ____ cm + ____ cm + ____ cm + ____ cm

= _____ cm

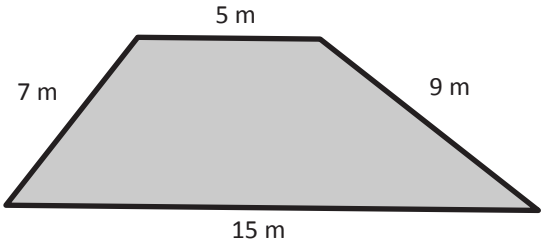
c.



P = ____ cm + ____ cm + ____ cm

= _____ cm

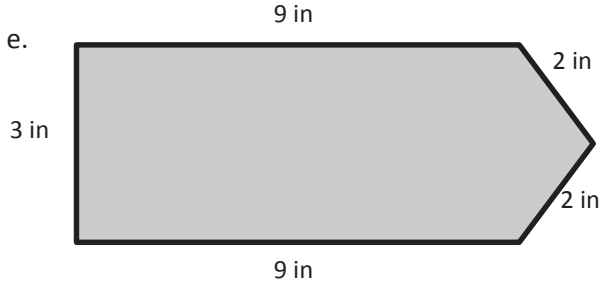
d.



P = ____ m + ____ m + ____ m + ____ m

= _____ m

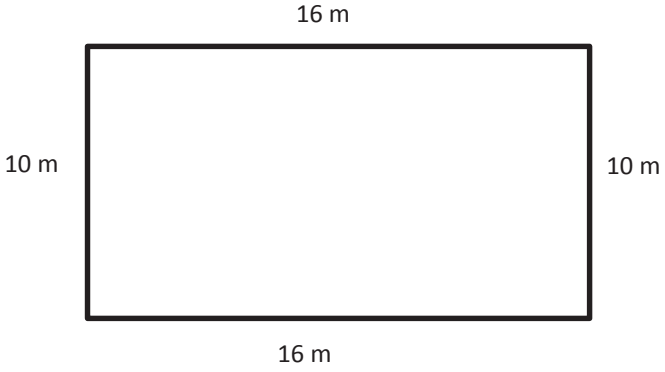
e.



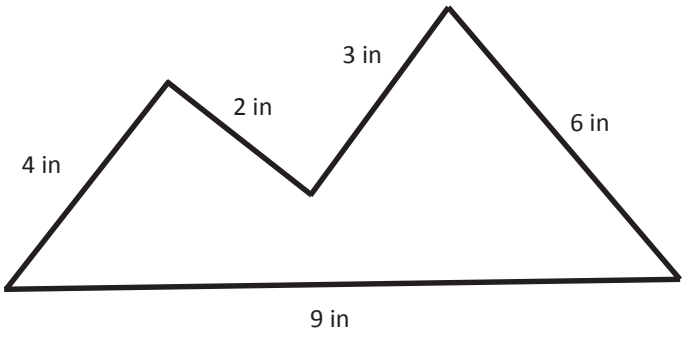
P = ____ in + ____ in + ____ in + ____ in + ____ in

= _____ in

2. Alan's rectangular swimming pool is 10 meters long and 16 meters wide. What is the perimeter?



3. Lila measures each side of the shape below.



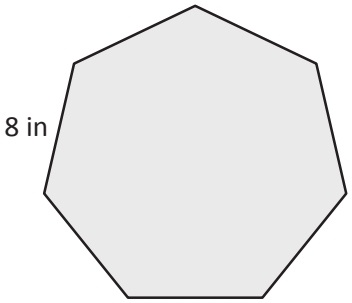
a. What is the perimeter of the shape?

b. Lila says the shape is a pentagon. Is she correct? Explain why or why not.

Name _____ Date _____

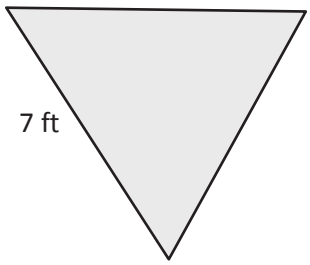
1. Label the unknown side lengths of the regular shapes below. Then, find the perimeter of each shape.

a.



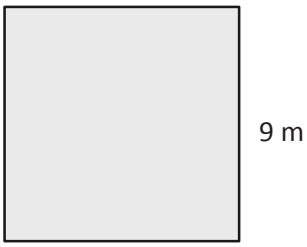
Perimeter = _____ in

b.



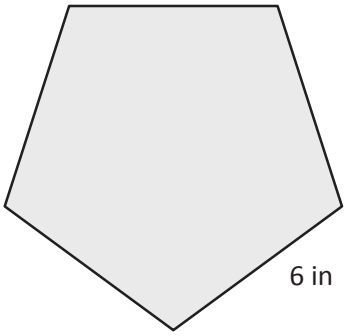
Perimeter = _____ ft

c.



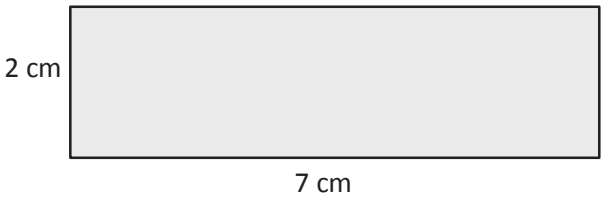
Perimeter = _____ m

d.



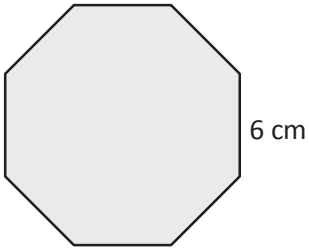
Perimeter = _____ in

2. Label the unknown side lengths of the rectangle below. Then, find the perimeter of the rectangle.



Perimeter = _____ cm

3. David draws a regular octagon and labels a side length as shown below. Find the perimeter of David's octagon.



4. Paige paints an 8-inch by 9-inch picture for her mom's birthday. What is the total length of wood that Paige needs to make a frame for the picture?

5. Mr. Spooner draws a regular hexagon on the board. One of the sides measures 4 centimeters. Giles and Xander find the perimeter. Their work is shown below. Whose work is correct? Explain your answer.

Giles's Work
Perimeter = 4 cm + 4 cm + 4 cm + 4 cm + 4 cm + 4 cm
Perimeter = 24 cm

Xander's Work
Perimeter = 6 × 4 cm
Perimeter = 24 cm

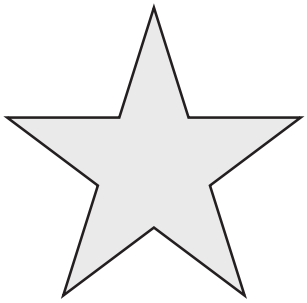
Name _____ Date _____

1. Mrs. Kozlow put a border around a 5-foot by 6-foot rectangular bulletin board. How many feet of border did Mrs. Kozlow use?

2. Jason built a model of the Pentagon for a social studies project. He made each outside wall 33 centimeters long. What is the perimeter of Jason's model pentagon?

3. The Holmes family plants a rectangular 8-yard by 9-yard vegetable garden. How many yards of fencing do they need to put a fence around the garden?

4. Marion paints a 5-pointed star on her bedroom wall. Each side of the star is 18 inches long. What is the perimeter of the star?



5. The soccer team jogs around the outside of the soccer field twice to warm up. The rectangular field measures 60 yards by 100 yards. What is the total number of yards the team jogs?

6. Troop 516 makes 3 triangular flags to carry at a parade. They sew ribbon around the outside edges of the flags. The flags' side lengths each measure 24 inches. How many inches of ribbon does the troop use?

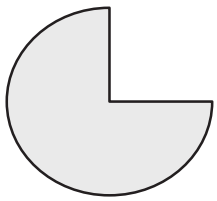
Name _____ Date _____

1. Find the perimeter of 10 circular objects to the nearest quarter inch using string. Record the name and perimeter of each object in the chart below.

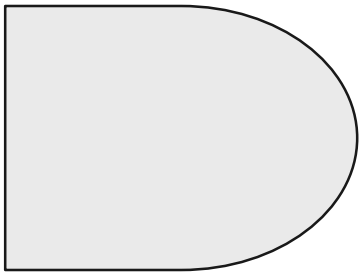
Object	Perimeter (to the nearest quarter inch)

a. Explain the steps you used to find the perimeter of the circular objects in the chart above.

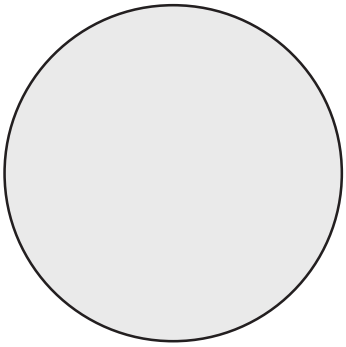
b. Could the same process be used to find the perimeter of the shape below? Why or why not?



2. Can you find the perimeter of the shape below using just your ruler? Explain your answer.



3. Molly says the perimeter of the shape below is $6\frac{1}{4}$ inches. Use your string to check her work. Do you agree with her? Why or why not?

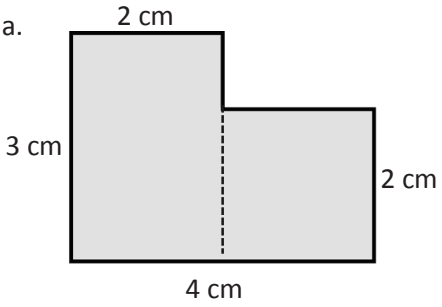


4. Is the process you used to find the perimeter of a circular object an efficient method to find the perimeter of a rectangle? Why or why not?

Name _____ Date _____

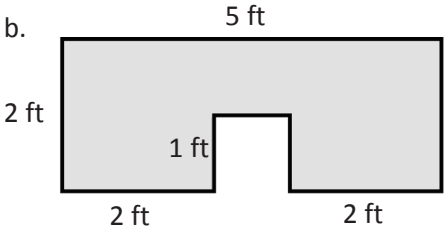
1. The shapes below are made up of rectangles. Label the unknown side lengths. Then, write and solve an equation to find the perimeter of each shape.

a.



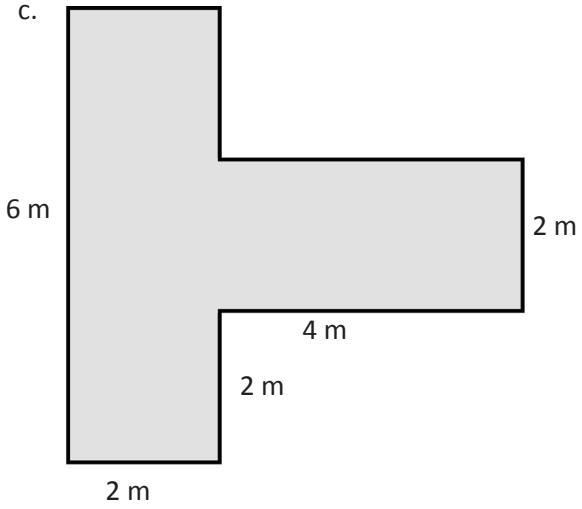
P =

b.



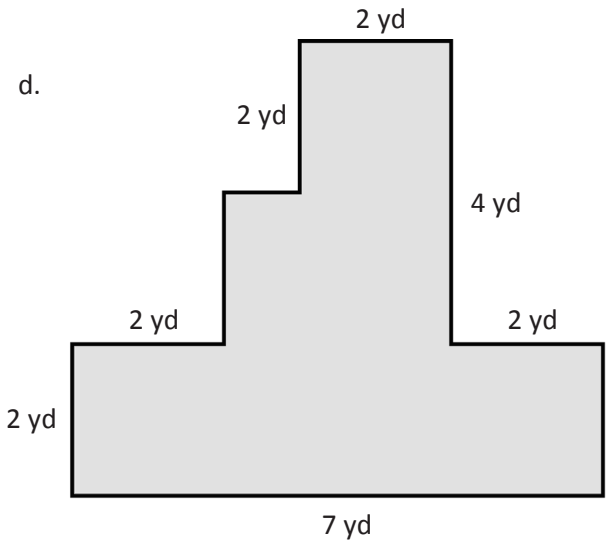
P =

c.



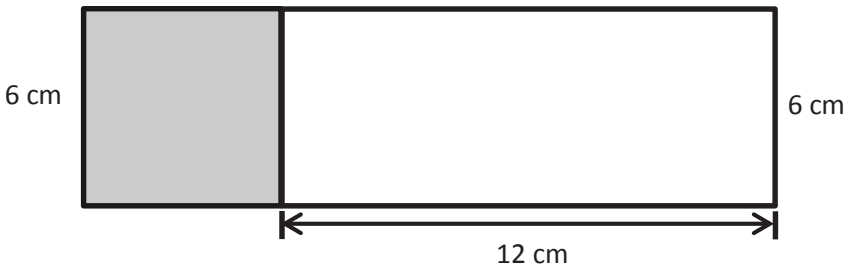
P =

d.

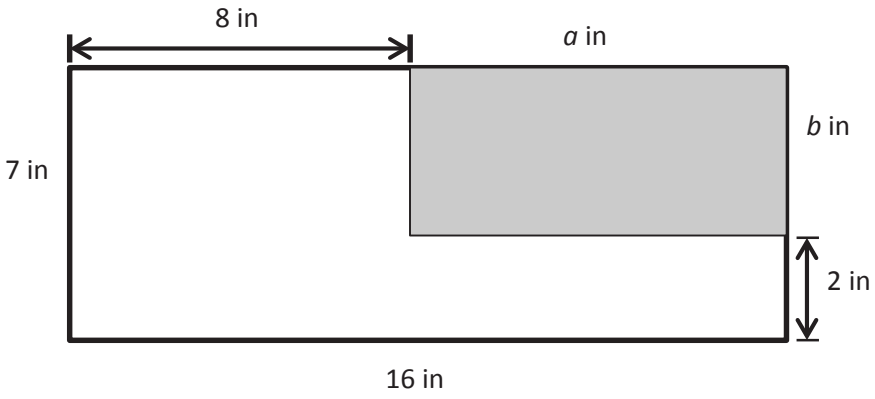


P =

2. Nathan draws and labels the square and rectangle below. Find the perimeter of the new shape.



3. Label the unknown side lengths. Then, find the perimeter of the shaded rectangle.



Name _____ Date _____

1. Use unit squares to build as many rectangles as you can with an area of 24 square units. Shade in squares on your grid paper to represent each rectangle that you made with an area of 24 square units.

   a. Estimate to draw and label the side lengths of each rectangle you built in Problem 1. Then, find the perimeter of each rectangle. One rectangle is done for you.

P = 24 units + 1 unit + 24 units + 1 unit = 50 units

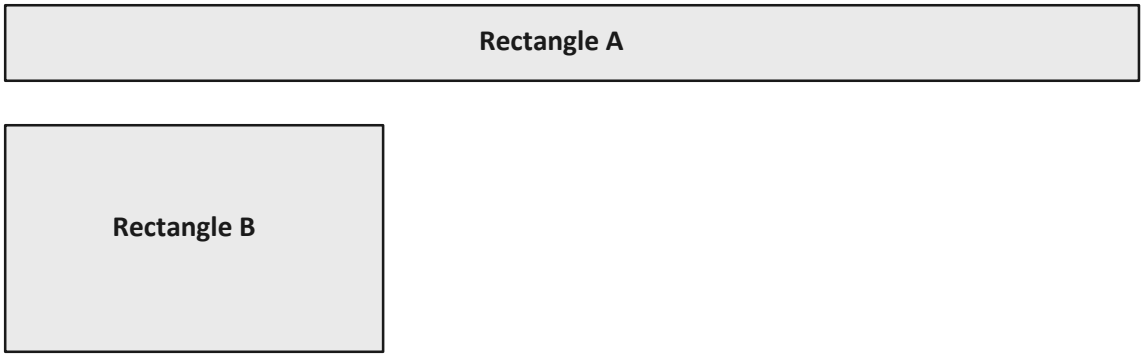
   b. The areas of the rectangles in part (a) above are all the same. What do you notice about the perimeters?

2. Use unit square tiles to build as many rectangles as you can with an area of 16 square units. Estimate to draw each rectangle below. Label the side lengths.

   a. Find the perimeters of the rectangles you built.

   b. What is the perimeter of the square? Explain how you found your answer.

3. Doug uses square unit tiles to build rectangles with an area of 15 square units. He draws the rectangles as shown below but forgets to label the side lengths. Doug says that Rectangle A has a greater perimeter than Rectangle B. Do you agree? Why or why not?



Name _____ Date _____

1. Use unit square tiles to make rectangles for each given number of unit squares. Complete the charts to show how many rectangles you can make for each given number of unit squares. The first one is done for you. You might not use all the spaces in each chart.

Number of unit squares = **12**

Number of rectangles I made: 3

Width	Length
1	12
2	6
3	4

Number of unit squares = **13**

Number of rectangles I made: ____

Width	Length

Number of unit squares = **14**

Number of rectangles I made: ____

Width	Length

Number of unit squares = **15**

Number of rectangles I made: ____

Width	Length

Number of unit squares = **16**

Number of rectangles I made: ____

Width	Length

Number of unit squares = **17**

Number of rectangles I made: ____

Width	Length

Number of unit squares = **18**

Number of rectangles I made: ____

Width	Length

2. Create a line plot with the data you collected in Problem 1.

Number of Rectangles Made with Unit Squares

Number of Unit Squares Used

X = 1 Rectangle

3. Which numbers of unit squares produce three rectangles?

4. Why do some numbers of unit squares, such as 13, only produce one rectangle?

Name _____ Date _____

1. Use your square unit tiles to build as many rectangles as you can with a perimeter of 12 units.

   a. Estimate to draw your rectangles below. Label the side lengths of each rectangle.

   b. Explain your strategy for finding rectangles with a perimeter of 12 units.

   c. Find the areas of all the rectangles in part (a) above.

   d. The perimeters of all the rectangles are the same. What do you notice about their areas?

2. Use your square unit tiles to build as many rectangles as you can with a perimeter of 14 units.

   a. Estimate to draw your rectangles below. Label the side lengths of each rectangle.

   b. Find the areas of all the rectangles in part (a) above.

   c. Given a rectangle's perimeter, what other information do you need to know about the rectangle to find its area?

Name _____ Date _____

Use the data you gathered from Problem Sets 20 and 21 to complete the charts to show how many rectangles you can create with a given perimeter. You might not use all the spaces in the charts.

Perimeter = 10 units

Number of rectangles you made: _____

Width	Length	Area
1 unit	4 units	4 square units

Perimeter = 12 units

Number of rectangles you made: _____

Width	Length	Area

Perimeter = 14 units

Number of rectangles you made: _____

Width	Length	Area

Perimeter = 16 units

Number of rectangles you made: _____

Width	Length	Area

Perimeter = 18 units

Number of rectangles you made: _____

Width	Length	Area

Perimeter = 20 units

Number of rectangles you made: _____

Width	Length	Area

Name _____ Date _____

1. On your centimeter grid paper, shade and label as many rectangles as you can with a perimeter of 16 centimeters.

   a. Sketch the rectangles below, and label the side lengths.

   b. Find the area of each rectangle you drew above.

2. On your centimeter grid paper, shade and label as many rectangles as you can with a perimeter of 18 centimeters.

   a. Sketch the rectangles below, and label the side lengths.

   b. Find the area of each rectangle you drew above.

3. Use centimeter grid paper to shade in as many rectangles as you can with the given perimeters.

   a. Use the charts below to show how many rectangles you shaded for each given perimeter. You might not use all the spaces in the charts.

Perimeter = 10 cm Number of rectangles I made: ____		
Width	Length	Area
1 cm	4 cm	4 square cm

Perimeter = 20 cm Number of rectangles I made: ____		
Width	Length	Area
1 cm	9 cm	9 square cm

   b. Did you make a square with either of the given perimeters? How do you know?

4. Macy and Gavin both draw rectangles with perimeters of 16 centimeters. Use words and pictures to explain how it is possible for Macy's and Gavin's rectangles to have the same perimeters but different areas.

Name _____ Date _____

Use the data you gathered from Problem Sets 20 and 21 to complete the charts to show how many rectangles you can create with a given perimeter. You might not use all the spaces in the charts.

Perimeter = 10 units

Number of rectangles you made: _____

Width	Length	Area
1 unit	4 units	4 square units

Perimeter = 12 units

Number of rectangles you made: _____

Width	Length	Area

Perimeter = 14 units

Number of rectangles you made: _____

Width	Length	Area

Perimeter = 16 units

Number of rectangles you made: _____

Width	Length	Area

Perimeter = 18 units

Number of rectangles you made: _____

Width	Length	Area

Perimeter = 20 units

Number of rectangles you made: _____

Width	Length	Area

Name _____ Date _____

1. Use the data you gathered from your Problem Sets to create a line plot for the number of rectangles you created with each given perimeter.

Number of Rectangles Made with a Given Perimeter

Perimeter Measurements in Units

X = 1 Rectangle

2. Why are all of the perimeter measurements even? Do all rectangles have an even perimeter?

3. Compare the two line plots we created. Is there any reason to think that knowing only the area of a rectangle would help you to figure out its perimeter or knowing only the perimeter of a rectangle would help you figure out its area?

4. Sumi uses unit square tiles to build 3 rectangles that have an area of 32 square units. Does knowing this help her find the number of rectangles she can build for a perimeter of 32 units? Why or why not?

5. George draws 3 rectangles that have a perimeter of 14 centimeters. Alicia tells George that there are more than 3 rectangles that have a perimeter of 14 centimeters. Explain why Alicia is correct.

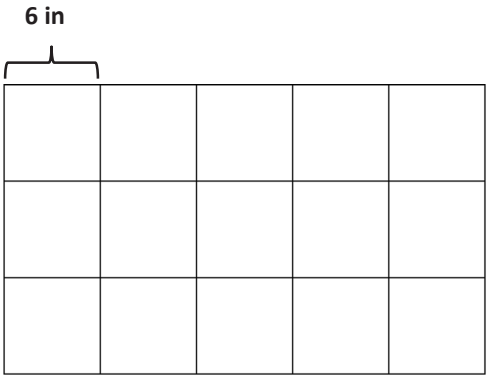
Name _____ Date _____

1. Gale makes a miniature stop sign, a regular octagon, with a perimeter of 48 centimeters for the town he built with blocks. What is the length of each side of the stop sign?

2. Travis bends wire to make rectangles. Each rectangle measures 34 inches by 12 inches. What is the total length of the wire needed for two rectangles?

3. The perimeter of a rectangular bathroom is 32 feet. The width of the room is 8 feet. What is the length of the room?

4. Raj uses 6-inch square tiles to make a rectangle, as shown below. What is the perimeter of the rectangle in inches?



5. Mischa makes a 4-foot by 6-foot rectangular banner. She puts ribbon around the outside edges. The ribbon costs $2 per foot. What is the total cost of the ribbon?

6. Colton buys a roll of wire fencing that is 120 yards long. He uses it to fence in his 18-yard by 24-yard rectangular garden. Will Colton have enough wire fencing left over to fence in a 6-yard by 8-yard rectangular play space for his pet rabbit?

Name _____ Date _____

Use the given perimeters in the chart below to choose the widths and lengths of your robot's rectangular body parts. Write the widths and lengths in the chart below. Use the blank rows if you want to add extra rectangular body parts to your robot.

Letter	Body Part	Perimeter	Width and Length
A	arm	14 cm	_____ cm by _____cm
B	arm	14 cm	_____ cm by _____cm
C	leg	18 cm	_____ cm by _____cm
D	leg	18 cm	_____ cm by _____cm
E	body	Double the perimeter of one arm = _____ cm	_____ cm by _____cm
F	head	16 cm	_____ cm by _____cm
G	neck	Half the perimeter of the head = _____ cm	_____ cm by _____cm
H			_____ cm by _____cm
I			_____ cm by _____cm
My robot has 7 to 9 rectangular body parts. Number of body parts: _____			

Use the information in the chart below to plan an environment for your robot. Write the width and length for each rectangular item. Use the blank rows if you want to add extra circular or rectangular items to your robot's environment.

Letter	Item	Shape	Perimeter	Width and Length
J	sun	circle	about 25 cm	
K	house	rectangle	82 cm	_____ cm by _____cm
L	tree top	circle	about 30 cm	
M	tree trunk	rectangle	30 cm	_____ cm by _____cm
N	tree top	circle	about 20 cm	
O	tree trunk	rectangle	20 cm	_____ cm by _____cm
P				
Q				
My robot's environment has 6 to 8 items. Number of items: _____				

Name _____ Date _____

Draw a picture of your robot in its environment in the space below. Label the widths, lengths, and perimeters of all rectangles. Label the perimeters of all circular shapes.

Name _____ Date _____

1. Collect the area measurements of your classmates' **robot bodies**. Make a line plot using everyone's area measurements.

Areas of Robot Bodies

Area Measurements of the Robot's Body in Square Centimeters

X = 1 Robot Body

a. How many different measurements are on the line plot? Why are the measurements different?

b. What does this tell you about the relationship between area and perimeter?

2. Measure and calculate the perimeter of your construction paper in inches. Show your work below.

3. Sketch and label two shapes with the same perimeter from the robot's environment. What do you notice about the way they look?

4. Write two or three sentences describing your robot and the environment in which it lives.

Name _____ Date _____

Part A: I reviewed _____'s robot.

1. Use the chart below to evaluate your friend's robot. Measure the width and length of each rectangle. Then, calculate the perimeter. Record that information in the chart below. If your measurements differ from those listed on the project, put a star by the letter of the rectangle.

Rectangle	Width and Length	Student's Perimeter	Required Perimeter
A	_____ cm by _____cm		14 cm
B	_____ cm by _____cm		14 cm
C	_____ cm by _____cm		18 cm
D	_____ cm by _____cm		18 cm
E	_____ cm by _____cm		28 cm
F	_____ cm by _____cm		16 cm
G	_____ cm by _____cm		8 cm
H	_____ cm by _____cm		
I	_____ cm by _____cm		

2. Is the perimeter of the robot's body double that of the arm? Show calculations below.

3. Is the perimeter of the robot's neck half the perimeter of the head? Show calculations below.

Part B: I reviewed _____'s robot environment.

4. Use the chart below to evaluate your friend's robot environment. Measure the width and length of each rectangle. Then, calculate the perimeter. Use your string to measure the perimeters of nonrectangular items. Record that information in the chart below. If your measurements differ from those listed on the project, put a star by the letter of the shape.

Item	Width and Length	Student's Perimeter	Required Perimeter
J			About 25 cm
K	_____ cm by _____cm		82 cm
L			About 30 cm
M	_____ cm by _____cm		30 cm
N			About 20 cm
O	_____ cm by _____cm		20 cm
P			
Q			

Name _____ Date _____

1. Gia measures her rectangular garden and finds the width is 9 yards and the length is 7 yards.

   a. Estimate to draw Gia's garden, and label the side lengths.

   b. What is the area of Gia's garden?

   c. What is the perimeter of Gia's garden?

2. Elijah draws a square that has side lengths of 8 centimeters.

   a. Estimate to draw Elijah's square, and label the side lengths.

   b. What is the area of Elijah's square?

   c. What is the perimeter of Elijah's square?

d. Elijah connects three of these squares to make one long rectangle. What is the perimeter of this rectangle?

3. The area of Mason's rectangular painting is 72 square inches. The width of the painting is 8 inches.

a. Estimate to draw Mason's painting, and label the side lengths.

b. What is the length of the painting?

c. What is the perimeter of Mason's painting?

d. Mason's mom hangs the painting on a wall that already has two of Mason's other paintings. The areas of the other paintings are 64 square inches and 81 square inches. What is the total area of the wall that is covered with Mason's paintings?

4. The perimeter of Jillian's rectangular bedroom is 34 feet. The length of her bedroom is 9 feet.

   a. Estimate to draw Jillian's bedroom, and label the side lengths.

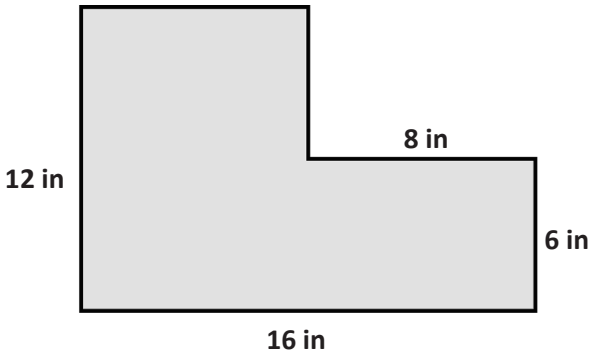
   b. What is the width of Jillian's bedroom?

   c. What is the area of Jillian's bedroom?

   d. Jillian has a 4-foot by 6-foot rug in her room. What is the area of the floor that is not covered by the rug?

Name _____ Date _____

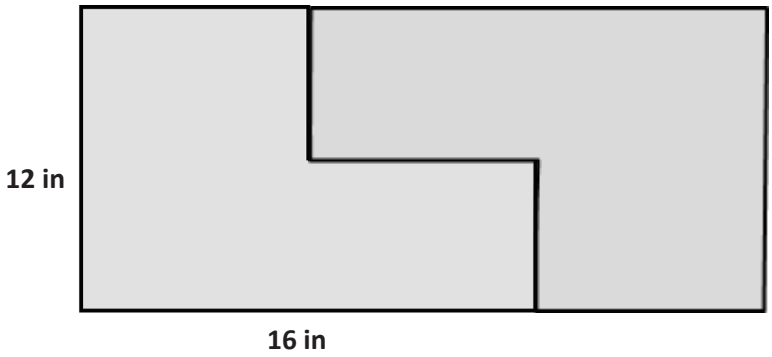
1. Kyle puts two rectangles together to make the L-shaped figure below. He measures some of the side lengths and records them as shown.



a. Find the perimeter of Kyle's shape.

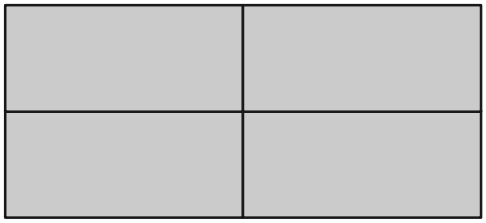
b. Find the area of Kyle's shape.

c. Kyle makes two copies of the L-shaped figure to create the rectangle shown below. Find the perimeter of the rectangle.



2. Jeremiah and Hayley use a piece of rope to mark a square space for their booth at the science fair. The area of their space is 49 square feet. What is the length of the rope that Jeremiah and Hayley use if they leave a 3-foot opening so they can get in and out of the space?

3. Vivienne draws four identical rectangles as shown below to make a new, larger rectangle. The perimeter of one of the small rectangles is 18 centimeters, and the width is 6 centimeters. What is the perimeter of the new, larger rectangle?



4. A jogging path around the outside edges of a rectangular playground measures 48 yards by 52 yards. Maya runs $3\frac{1}{2}$ laps on the jogging path. What is the total number of yards Maya runs?

Name _____ Date _____

Use this form to critique your classmate's problem-solving work.

Classmate:		**Problem Number:**	
Strategies My Classmate Used:			
Things My Classmate Did Well:			
Suggestions for Improvement:			
Strategies I Would Like to Try Based on My Classmate's Work:			

Name _____ Date _____

Use this form to analyze your classmate's representations of one-half shaded.

Square (letter)	Does this square show one-half shaded?	Explain why or why not.	Describe changes to make so the square shows one-half shaded.

Name _____ Date _____

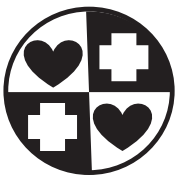
1. Look at the circles you shaded today. Glue a circle that is about one-half shaded in the space below.

   a. Explain the strategy you used to shade in one-half of your circle.

   b. Is your circle exactly one-half shaded? Explain your answer.

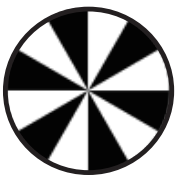
2. Julian shades 4 circles as shown below.

Circle A



Circle B

Circle C



Circle D

   a. Write the letters of the circles that are about one-half shaded.

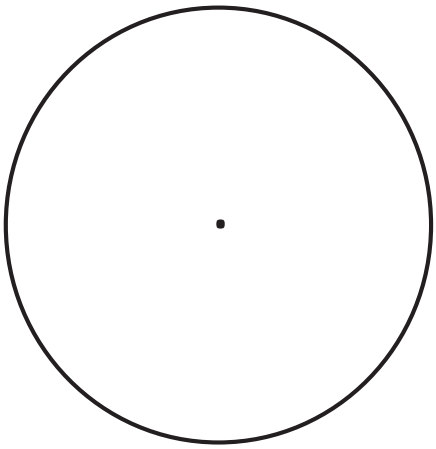
b. Choose one circle from your answer to Part (a), and explain how you know it's about one-half shaded.

Circle _____

c. Choose one circle that you did not list in Part (a), and explain how it could be changed so that it is about one-half shaded.

Circle _____

3. Read the clues to help you shade the circle below.



a. Divide the circle into 4 equal parts.
b. Shade in 2 parts.
c. Erase a small circle from each shaded part.
d. Estimate to draw and shade 2 circles in the unshaded parts that are the same size as the circles you erased in Part (c).

4. Did you shade in one-half of the circle in Problem 3? How do you know?

Name _____ Date _____

List some games we played today in the chart below. Place a check mark in the box that shows how you felt about your level of fluency as you played each activity. Check off the last column if you would like to practice this activity over the summer.

Activity	I still need some practice with my facts.	I am fluent.	I would like to put this in my summer activity book.
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			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