Al Huiteen school

Cycle – 2

EOT3 -Coverage

Mathematics

6th grade

Teacher :Alaa Elatawy

Academic Year العام الدراسي	2023/2024
Term الفصل	3
Subject المادة	Mathematics/Reveal الرياضيات/ريفيل
Grade الصف	6
Stream المسار	General العام
Number of MCQ عدد الأسئلة الموضوعية	15
Marks of MCQ درجة الأسئلة الموضوعية	4
Number of FRQ عدد الأسئلة المقالية	5
Marks per FRQ الدرجات للأسئلة المقالية	(6-10)
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	Not Allowed
الآلة الحاسبة	غير مسموحة

*	Questions might appear in a different order in the actual exam, or on the exam paper in the case of G3, G4 and G5.
*	قد تظهر الأسئلة بترتيب مختلف في الامتحان الفعلي، أو على ورقة الامتحان في حالة الصفوف G4، G3و G5
**	As it appears in the textbook, LMS, and (Main_IP).
**	كما وردت في كتاب الطالب وLMS والخطة الفصلية.

T. Alaa Elatawy

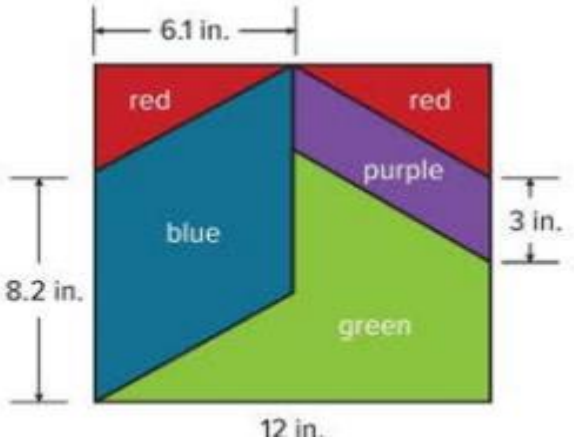
مساعدة المديره
شمسه المزروعى

مديرة المدرسة
فوقيه مصطفى

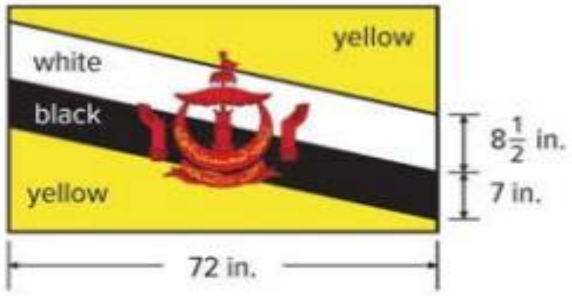
Part1	Type of Questions	MCQ/موضوعى	الدرجات لكل سؤال	4 درجات

1	M8L1	Area of Parallelogram	1-6	Page :441

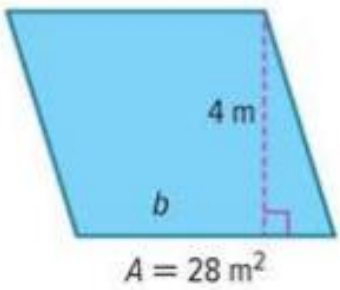
1. The pattern shows the dimensions of a quilting square that Nakida will use to make a quilt. How much blue fabric will she need to make one square? (Example 1)



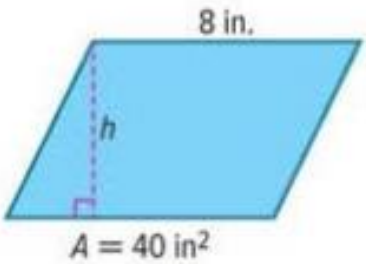
2. A group of students is painting the flag of Brunei for a geography project. Joseph is responsible for painting only the background colors of the flag. How many square inches will he cover with white paint? (Example 1)



3. Find the missing dimension of the parallelogram. (Example 2)

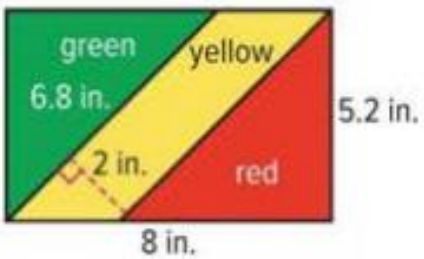


4. Find the missing dimension of the parallelogram. (Example 2)

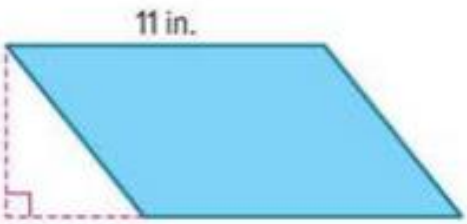


Test Practice

5. Find the area of the yellow striped region of the flag of the Republic of the Congo.



6. Open Response What is the area of the parallelogram?



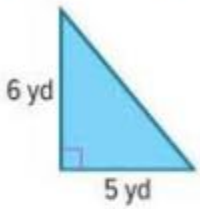
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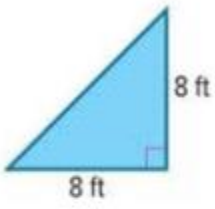
2	M8L2	Area of Triangle	1 - 4	Page :449

Find the area of each triangle. (Example 1)

1.



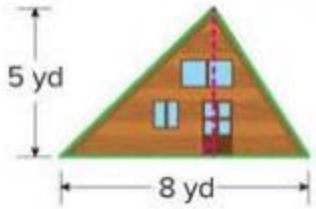
2.



3. Tameeka is in charge of designing a school pennant for spirit week. What is the area of the pennant? (Example 2)



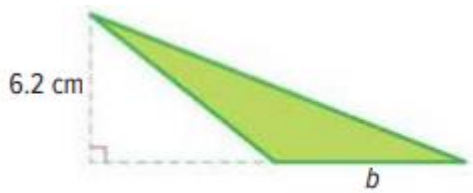
4. Norma has an A-frame cabin. The back is shown below. If the total area of the windows and doors is 3.5 square yards, how many square yards of paint will she need to cover the back of the cabin? (Example 2)



3	M8L2	Area of Triangles	Example 3	Page :446

Example 3 Find Missing Dimensions of T riangles

Find the missing dimension of the triangle.



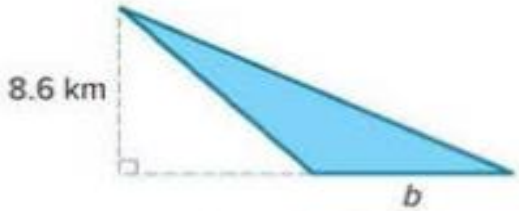
$A = 24.8 \text{ cm}^2$

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3	M8L2	Area of Triangles	5 - 8	Page :449

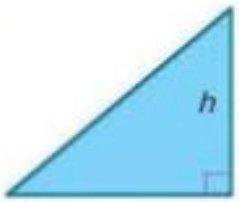
Find the missing dimension in each triangle. (Example 3)

5.



$A = 38.7 \text{ km}^2$

6.

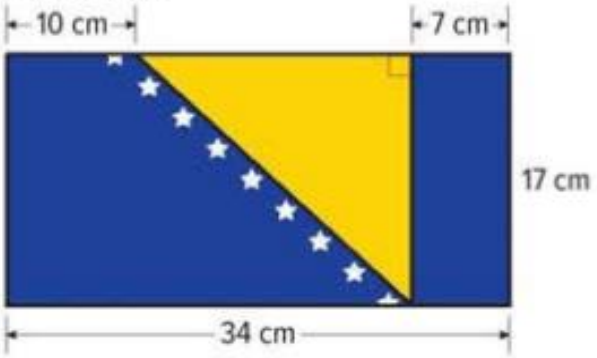


$A = 13.5 \text{ in}^2$

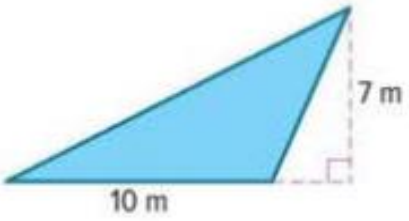
3	M8L2	Area of Triangles	5 - 8	Page :449

Test Practice

7. The flag of Bosnia and Herzegovina is shown. What is the area of the triangle on the flag?



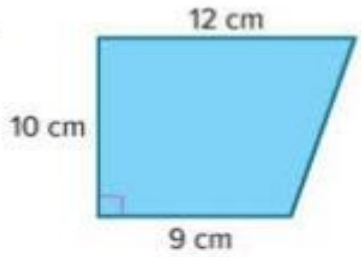
8. Open Response What is the area of the triangle?



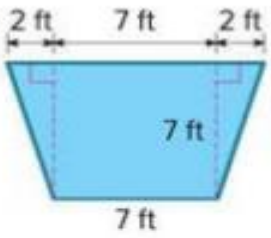
4	M8L3	Area of Trapezoid	1-8	Page :461

Decompose each trapezoid to find its area. (Example 1)

1.

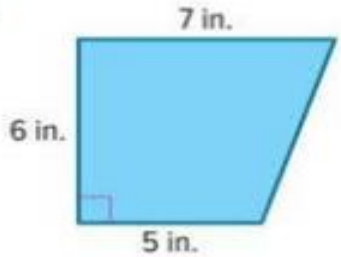


2.

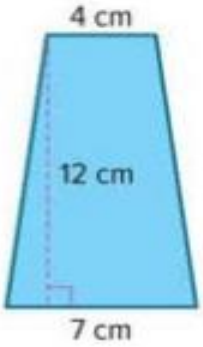


Find the area of each trapezoid. (Example 2)

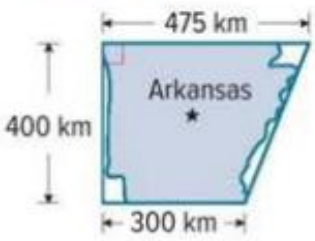
3.



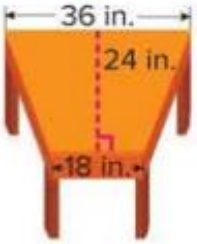
4.



5. The shape of Arkansas resembles a trapezoid. What is the approximate area of Arkansas? (Example 3)



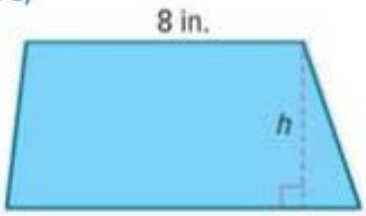
6. The top of the desk shown is in the shape of a trapezoid. What is the area of the top of the desk? (Example 4)



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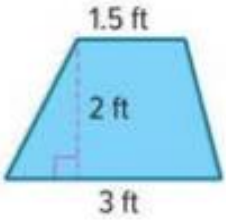
4	M8L3	Area of Trapezoid	1-8	Page :461

7. Find the missing dimension of the trapezoid. (Example 5)



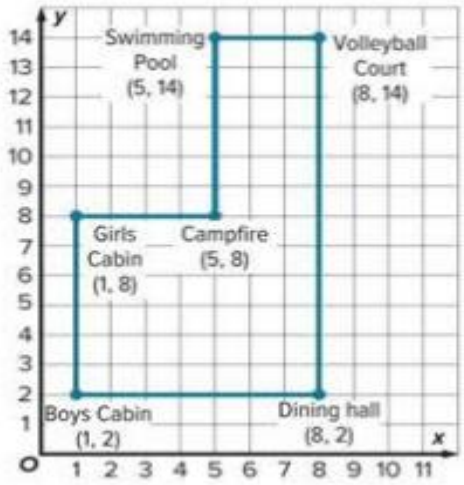
$A = 40 \text{ in}^2$

8. Open Response Ciro made a sign in the shape of a trapezoid. What was the area of Ciro's sign?

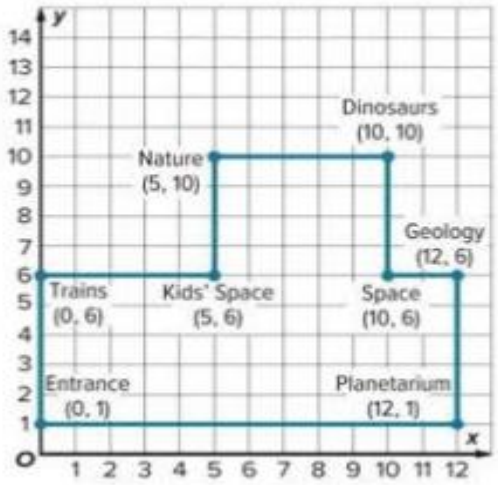


5	M8L5	Area of Regular Polygons Polygons on the Coordinate Plane	1 -6	Page :477

1. Find the perimeter of the summer camp shown on the coordinate plane. (Example 1)



2. Find the perimeter of the science center shown on the coordinate plane. (Example 1)



3. A rectangle has vertices $W(2, 7)$, $X(2, 0)$, $Y(6, 0)$, and $Z(6, 7)$. Use the coordinates to find the perimeter of the rectangle. (Example 2)

4. A rectangle has vertices $H(3, 0)$, $I(3, 7)$, $J(6, 7)$, and $K(6, 0)$. Use the coordinates to find the perimeter of the rectangle. (Example 2)

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5	M8L5	Area of Regular Polygons Polygons on the Coordinate Plane	1 -6	Page :477

Test Practice

5. A polygon has vertices $A(3, 3)$, $B(3, 6)$, and $C(9, 3)$. Find the area of the polygon. (Example 3)

6. Multiple Choice A polygon has vertices $J(2, 3)$, $K(4, 3)$, $L(4, 7)$, and $M(2, 7)$. What is the area of the polygon? (Example 3)

(A) 8 square units

(B) 10 square units

(C) 12 square units

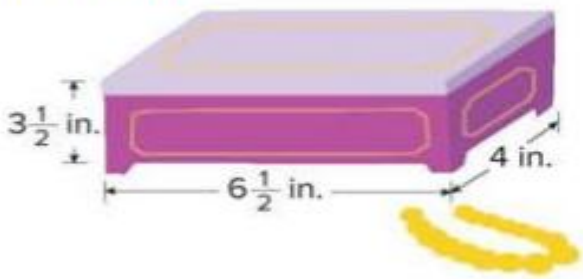
(D) 16 square units

6	M9L1	Volume of Rectangular Prisms	1 - 2	Page :493

1. Geneva's younger brother has a toy box that is shaped like a rectangular prism with the dimensions shown. What is the volume of the toy box? (Example 1)



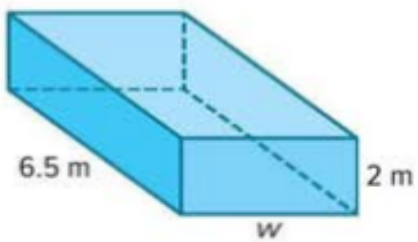
2. Roy made a jewelry box in the shape of a rectangular prism with the dimensions shown. What is the volume of the jewelry box? (Example 1)



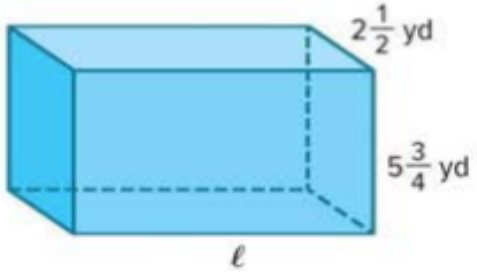
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7	M9L1	Volume of Rectangular Prisms	3-9	Page :493, 494

3. The rectangular prism shown has a volume of 52 cubic meters. What is the width of the prism? (Example 2)



4. The rectangular prism shown has a volume of 115 cubic yards. What is the length of the prism? (Example 2)



7	M9L1	Volume of Rectangular Prisms	3-9	Page :493, 494

Test Practice

5. Raphael drives a standard-sized dump truck with a rectangular prism shaped bed. The volume of the bed of the truck is 720 cubic feet. If the length of the bed is 15 feet and the width is 8 feet, what is the height of the bed of the dump truck?

6. Open Response A rectangular prism has a length of 8 inches, a width of $7\frac{1}{2}$ inches, and a height of $6\frac{1}{4}$ inches. What is the volume of the prism?

Apply

7. The Lagusch family needs to rent a dumpster. The dumpsters they can choose from are shaped like rectangular prisms and have the dimensions shown. Which size dumpster is the best value to rent based on the cost per cubic foot?

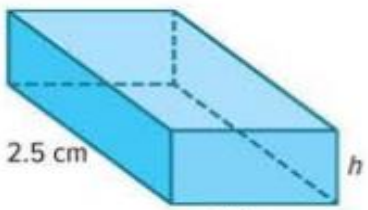
Size	Length (ft)	Width (ft)	Height (ft)	Cost ($)
Small	16	8	2	204.80
Medium	20	8	3.5	420.00
Large	22	8	5	677.60

8. Create Draw and label a rectangular prism that has a volume less than 100 cubic meters.

9. MP **Find the Error** A classmate found the height of the prism shown using the following method. Find the error and correct it.

$h = 1.5(1.2)(2.5)$

$= 4.5$ cm

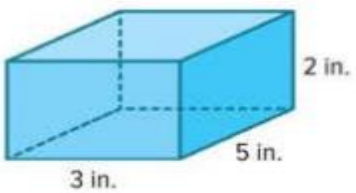


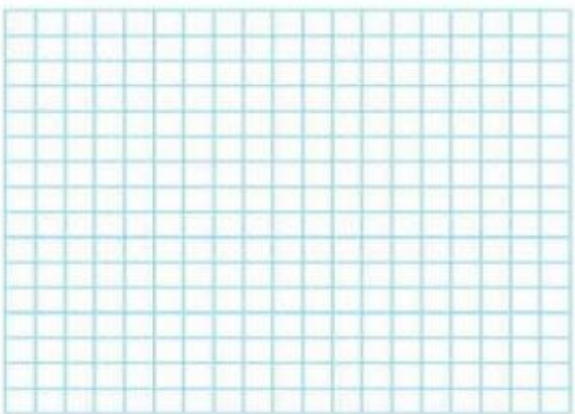
$V = 1.5\ \text{cm}^3$

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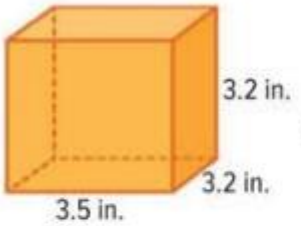
8	M9L2	Surface Area of Rectangular Prism	1-8	Page :503&504

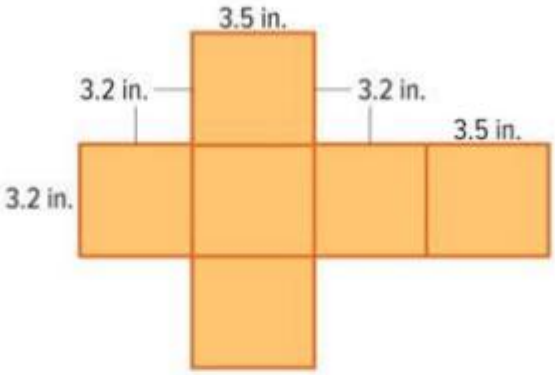
1. Draw and label a net to represent the rectangular prism. Let each grid unit represent 1 inch. (Example 1)





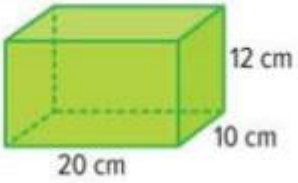
2. Trey is using cardboard to construct building blocks that are shaped like rectangular prisms. Use the net to determine the minimum amount of cardboard he will need to construct one block. (Example 2)

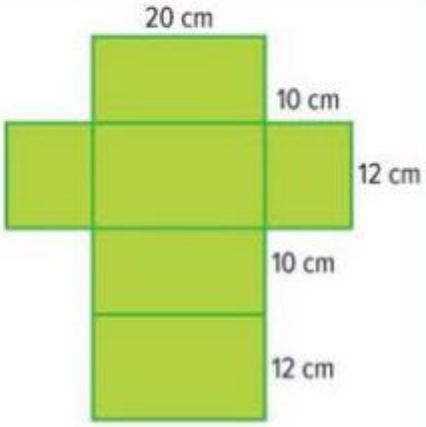




Test Practice

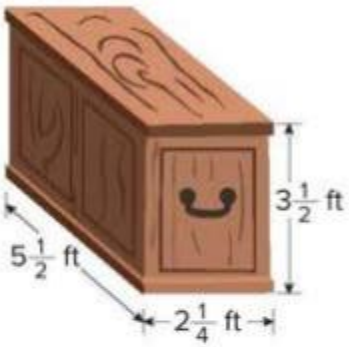
3. Open Response Cody is painting the box shown for part of his art project. If he paints all of the surfaces, how many square centimeters will he paint? Use the net to find the surface area of the rectangular prism.





Apply

4. Jing is putting a special restorative stain on the entire surface of her rectangular prism shaped hope chest, except for her name plate that measures $\frac{1}{2}$ foot by $\frac{3}{4}$ foot. If one can of stain covers about 35 square feet, how many cans of stain will she need to buy?



5. MP **Make a Conjecture** Write a formula that could be used to find the surface area of a rectangular prism. Define each variable you choose to use in your formula.

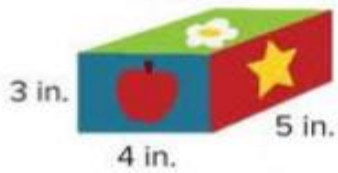
6. Create Draw and label a rectangular prism that has a surface area that is greater than its volume.

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8	M9L2	Surface Area of Rectangular Prism	1-8	Page :503&504

7. **Reason Abstractly** Find the surface area and volume of each rectangular prism shaped block. Which block has the greater surface area? Does the same block have a greater volume? Write an argument that can be used to defend your solution.

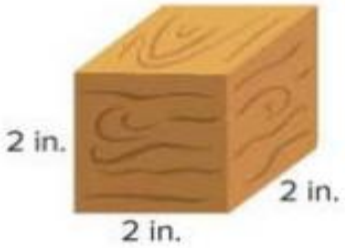
Block A



Block B



8. Meredith is painting rectangular prisms like the one shown. If she covers all the surfaces, how many square inches need to be painted? Describe two different ways to solve the problem.

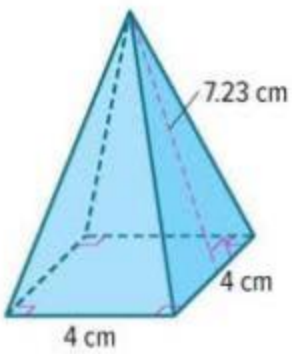


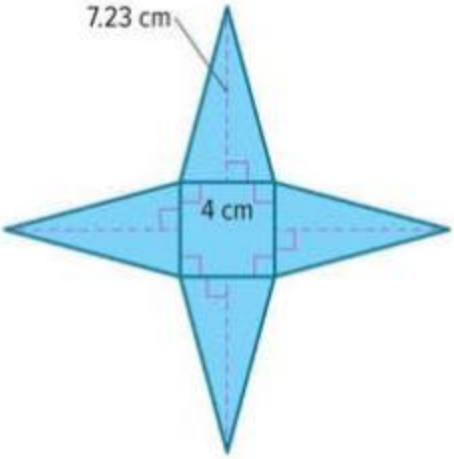
9	M9L4	Surface Area of Pyramids	Example 3&4	Page :523 &525

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Example 3 Find Surface Area of a Square Pyramid

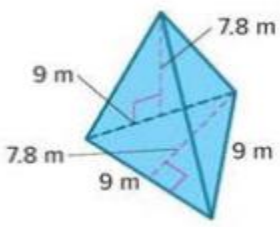
Use the net to find the surface area of the square pyramid.

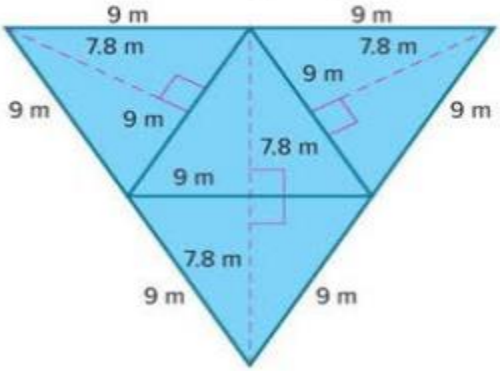




Example 4 Find Surface Area of a Triangular Pyramid

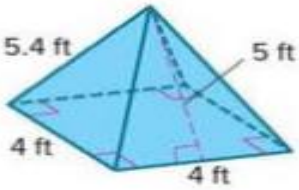
Use the net to find the surface area of the triangular pyramid.



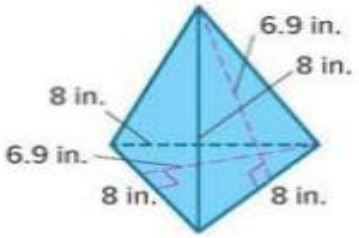


9	M9L4	Surface Area of Pyramids	1-2	Page :529

1. Draw and label a net to represent the square pyramid. (Example 1)



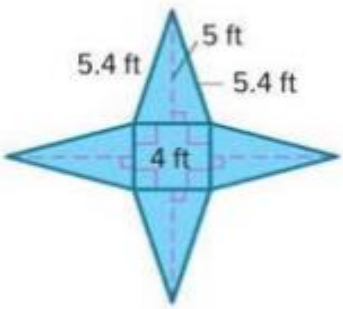
2. Draw and label a net to represent the triangular pyramid. (Example 2)



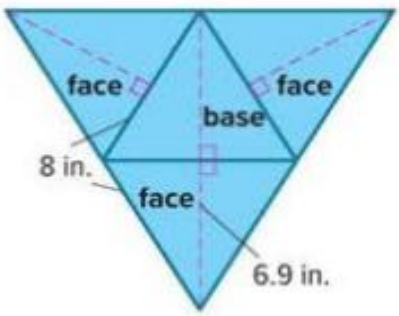
T. Alaa Elatawy

10	M9L4	Surface Area of Pyramids	3-5	Page :529&530

3. Use the net to find the surface area of the pyramid. (Example 3)

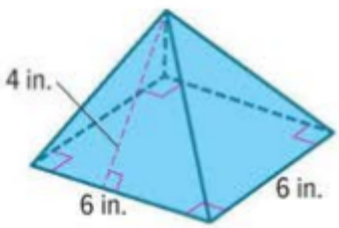


4. Open Response Use the net to find the surface area of the pyramid in square inches. (Example 4)



Apply

5. Mr. Potter makes two types of wooden pyramid puzzles. The base of Puzzle 1 is a square with side lengths of 5 inches and a slant height of 7 inches. Puzzle 2 is shown. If the cost of materials to build the puzzles is $0.16 per square inch, what is the difference in cost to make the puzzles?



1. Chris surveyed the members of his tennis team by asking the question *In how many tennis tournaments have you played?*. The results are shown in the table. Construct a dot plot of the data and summarize the results. (Example 1)

Number of Tennis Tournaments					
0	2	1	4	0	1
1	0	3	2	6	0

2. The table shows the results of asking a group of teachers the question *How many students are in your homeroom?*. Construct a histogram to represent the data. (Example 2)

Homeroom Class Size						
17	26	20	23	19	23	22
22	24	19	20	21	20	23

3. The table shows the results of asking a group of students the question *How many hours per month do you volunteer?*. Construct a histogram to represent the data. (Example 2)

Hours Spent Volunteering						
48	30	21	10	1	40	19
10	5	40	39	20	9	40
31	45	29	40	18	49	31
24	32	15	0	15	27	12

Test Practice

4. Open Response Petra surveyed the members of her dance class by asking the question *How many hours outside of class do you usually practice dance each week?*. The results are shown in the table. Construct a dot plot of the data.

Number of Hours				
1	3	4	5	2
2	2	4	3	1
3	3	2	4	2

Apply

5. Lou wanted to determine how much his friends pay for video games. He surveyed them using the question *How much did you pay for the last video game you bought?* The responses were $29, $45, $50, $55, $34, $28, $35, $35, $45, $30, $34, and $55. How many more games cost between $30 and $39 than between $40 and $49?

T. Alaa Elatawy

1. The number of cans collected over the weekend by each sixth grade homeroom was 57, 59, 60, 58, 58, and 56 cans. Find the mean number of cans collected. (Example 1)

2. Grace and her friends are comparing the number of pets they own. They have 1, 2, 0, 5, 1, 1 and 4 pets. Find the mean number of pets owned. (Example 1)

3. The amount Lucy earned babysitting each month for the past five months was $225, $280, $240, $180, and $200. Suppose the mean for six months was $220. How much did Lucy earn babysitting during the sixth month? (Example 2)

4. The average high temperature last week was 65 degrees Fahrenheit. The high temperatures for Sunday through Friday were 68, 70, 73, 45, 68, and 71 degrees Fahrenheit. What was the high temperature on Saturday? (Example 2)

5. The table shows the results of a survey about the number of E-mails sent in one day. Find the median number of E-mails sent per day. (Example 3)

Number of E-mails Sent Per Day						
20	24	22	27	21	27	20
27	22	23	20	22	24	26
23	26	27	22	27	20	25

6. The table shows the number of students in each group on a school field trip. Find the median size of a group. (Example 3)

Number of Students in Each Group				
5	7	8	7	6
4	4	5	6	9
7	5	7	8	6
9	7	5	4	5

Test Practice

7. The table shows the number of points scored by a basketball team in each game last season. Find the median number of points scored. (Example 4)

Number of Points					
64	41	52	63	44	54
42	67	44	68	43	61

8. Open Response The number of points Seth has earned playing his favorite game is shown. Find the median of the data.

40, 28, 24, 37, 43, 26, 30, 36

T. Alaa Elatawy

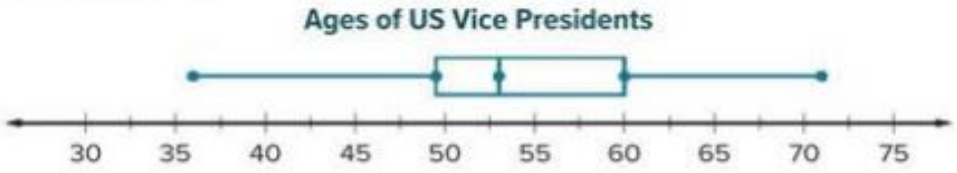
13	M10L4	Interquartile Range and Box Plots	1 - 5	Page :567

1. Cameron surveyed her friends about the number of apps they use. The responses were 15, 16, 18, 9, 18, 4, 19, 20, 17, and 36 apps. Use the range and interquartile range to describe how the data vary. (Example 1)

2. The table shows the number of hours different animals spend sleeping per day. Use the range and interquartile range to describe how the data vary. (Example 1)

Time Animals Spend Sleeping (h)					
12	20	16	11	4	2

3. The box plot shows the ages of vice presidents when they took office. Describe the distribution of the data. What does it tell you about the ages of vice presidents? (Example 2)



4. The ages of children taking a hip-hop dance class are 10, 9, 9, 7, 12, 14, 14, 9, and 16 years old. Construct a box plot of the data. Then describe the distribution of the data. (Example 3)

T. Alaa Elatawy

Test Practice

5. Open Response The cost of tents on sale at a sporting goods store are $66, $72, $78, $69, $64, $70, $67, $72, and $66. Use the range and interquartile range to describe how the data vary.

14	M10L5	Mean Absolute Deviation	1 - 5	Page :573

1. The table shows the number of sunny days in various U.S. cities in the last month. Find the mean absolute deviation. Explain what the mean absolute deviation represents. (Example 1)

Number of Sunny Days in Various Cities Last Month			
15	27	10	19
24	21	28	16

2. The table shows the number of flowers sold by each sixth grade homeroom. Find the mean absolute deviation. Explain what the mean absolute deviation represents. (Example 1)

Number of Flowers Sold				
75	89	80	145	85
60	92	104	90	100

14	M10L5	Mean Absolute Deviation	1 - 5	Page :573

3. The table shows the number of wins of two school baseball teams over the last five years. Find the mean absolute deviation for each team. Then compare the variations. (Example 2)

	Number of Wins Per Season				
Bears	7	10	13	12	9
Saints	12	15	10	14	13

4. The table shows the number of canned goods each homeroom collected over seven days. Find the mean absolute deviation. Then compare the variations. Round to the nearest hundredth, if necessary. (Example 2)

	Number of Canned Goods Collected						
Room 101	57	52	40	42	37	54	47
Room 102	51	17	42	40	46	74	31

Test Practice

5. Open Response The table shows the number of Calories per serving of different snacks. What is the mean absolute deviation of the data set? Round to the nearest hundredth, if necessary.

Number of Calories					
61	42	52	27	35	23

T. Alaa Elatawy

15	M10L6	Outliers	Learn	Page :575

Learn Outliers

An **outlier** is a data value that is very far away from the other data values. It can be much greater in value or much less than the other values. Consider the data set shown.

225, 245, 295, 305, 360, 387, 388, 420, 470, 480, 625, 780

How do you know if either of the extreme values, 225 or 780, are considered outliers?

An outlier is defined as a value that lies more than 1.5 times the interquartile range either above Q_3 or below Q_1.

$Q_1 = 300$ Median $= 387.5$ $Q_3 = 475$

225, 245, 295, 305, 360, 387, 388, 420, 470, 480, 625, 780

IQR $= 475 - 300$, or 175

Determine the upper and lower limits for the outliers.

1. Last week, Joakim spent 40, 25, 60, 30, 35, and 40 minutes practicing the piano. Identify any outliers in the data. (Example 1)

2. Last month, a basketball team scored 83, 84, 85, 87, 89, 88, 67, 79, and 81 points in their games. Identify any outliers in the data. (Example 1)

3. Abrianna sold 20, 23, 18, 4, 17, 21, 15, and 56 boxes of cookies after different football games. Identify any outliers in the data. (Example 1)

4. Last week a certain pet store had 52, 72, 96, 21, 58, 40, and 75 paying customers. Identify any outliers in the data. (Example 1)

5. The prices of trees that Sahana bought are $46, $39, $40, $45, $44, $68, and $51. Calculate the mean and median with and without the outlier. Round to the nearest tenth, if necessary. Choose the measure that best describes the center. (Example 2)

6. The prices of backpacks are $37, $43, $41, $36, $44, and $70. Calculate the mean and median with and without the outlier. Round to the nearest tenth, if necessary. Choose the measure that best describes the center. (Example 2)

T. Alaa Elatawy

7. The table shows the number of points scored by a football team. Calculate the mean and median with and without the outlier. Round to the nearest tenth, if necessary. Choose the measure that best describes the center. Explain. (Example 2)

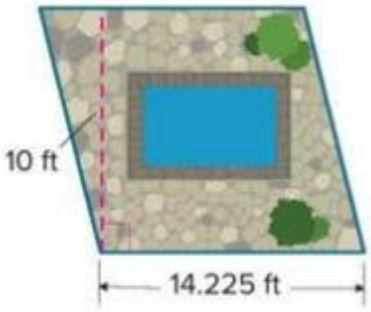
Points Scored by a Football Team			
14	20	3	9
18	35	21	24
7	12	31	68

Part2	Type of Questions	FRQ/ مقالي	الدرجات لكل سؤال	6-10 درجات

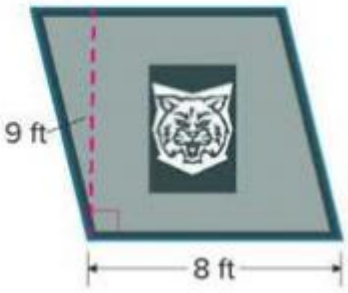
16	M8L1	Area of Parallelograms	7 - 9	Page :442

Apply

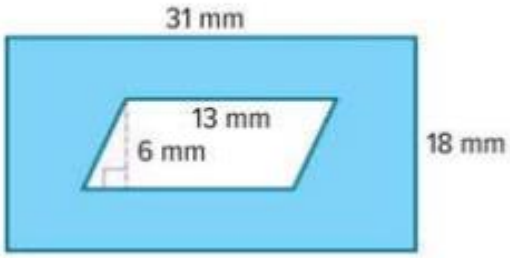
7. Liam is designing a patio and fountain for his backyard. The fountain will cover 50 square feet. The remaining space will be covered with tiles. If one tile covers 2.25 square feet, how many tiles will Liam need?



8. T ara and Veronica are making a parallelogram-shaped banner for a football game. They will paint the entire banner except for a rectangular section where a photo of the school's mascot will be placed. The photo of the mascot has an area of 6 square feet. If a 16-ounce bottle of primer covers 24 square feet, how many bottles of paint will they need?



9. MP **Identify Structure** Find the area of the shaded region.



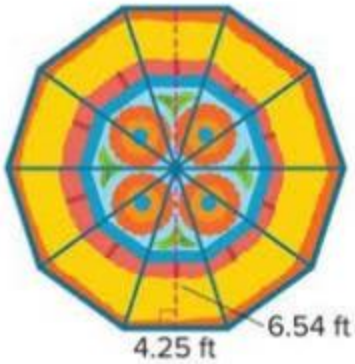
T. Alaa Elatawy

17	M8L4	Area of Regular Polygons	1 - 6	Page :467-468

1. Kendra knitted the coaster shown as a present for her grandmother. The coaster is shaped like a regular hexagon. Each side of the hexagon is 3.5 inches. Find the area of the coaster. Round to the nearest hundredth. (Example 1)

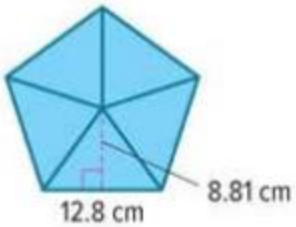


2. Paul bought a new rug in the shape of a regular decagon. Each side of the decagon is 4.25 feet. Find the area of the rug. Round to the nearest hundredth. (Example 1)



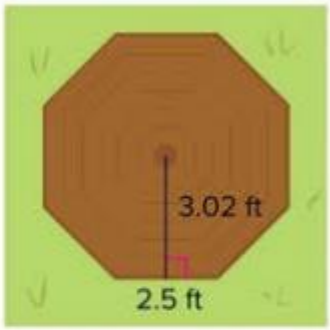
Test Practice

3. Open Response A regular pentagon is shown. What is the area of the pentagon?

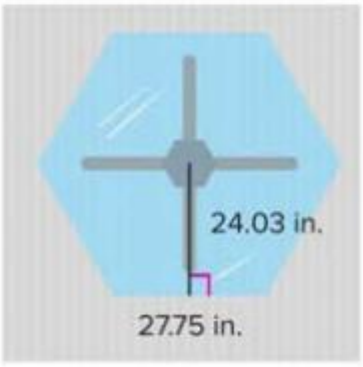


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4. Julian is going to build a picnic table. The top of the picnic table is shaped like an octagon with sides measuring 2.5 feet. If the wood costs $3.95 per square foot, what is the least he will spend on the top of the picnic table?



5. Williana's mother wants to buy a glass tabletop for their dining room table. The tabletop is shaped like a hexagon with sides measuring 27.75 inches. If the glass costs $0.06 per square inch, how much will she spend on the glass table top?



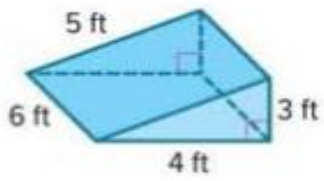
T. Alaa Elatawy

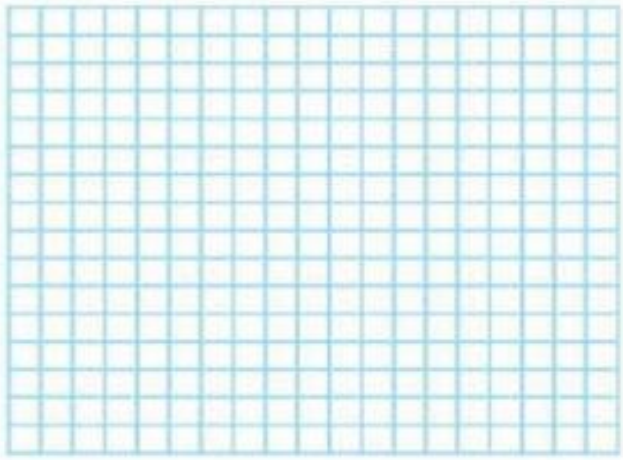
17	M8L4	Area of Regular Polygons	1 - 6	Page :467-468

6. Draw a regular pentagon and use dashed lines to show the ways it can be decomposed. Describe the shapes in the decomposed figure.

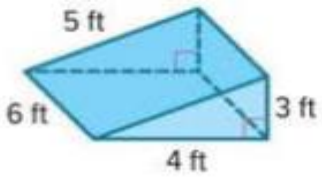
18	M9L3	Surface area of Triangular Prisms	1 - 5	Page :515-516

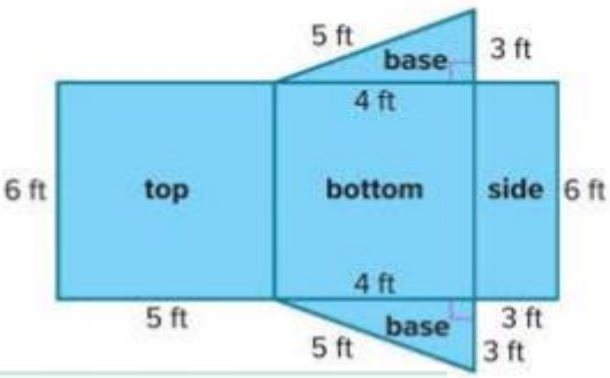
1. Draw and label a net to represent the triangular prism. Let each grid unit represent 1 foot. (Example 1)



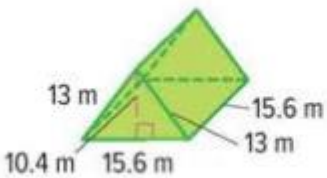


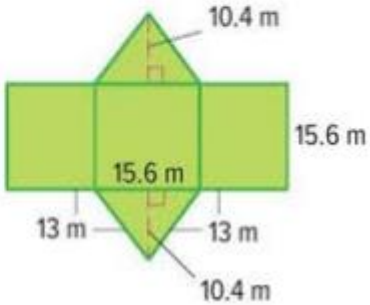
2. Use the net to find the surface area of the triangular prism. (Example 2)





3. Open Response Use the net to find the surface area of the triangular prism in square meters. (Example 3)



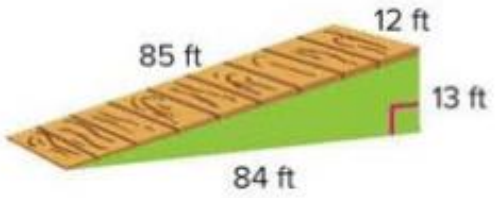


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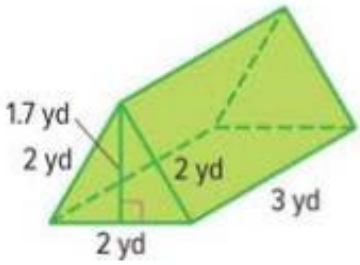
18	M9L3	Surface area of Triangular Prisms	1 - 5	Page :515-516

Apply

4. Mr. Saldivar is building a ramp in the shape of a triangular prism with the dimensions shown. Sheets of plywood are 8 feet long and 4 feet wide. What is the minimum number of sheets of plywood he needs to buy in order to have enough to build the ramp?



5. A tent is in the shape of the triangular prism with the dimensions shown. If the canvas to make the tent costs $4.99 per square yard, how much will it cost for the fabric to make the tent?



T. Alaa Elatawy

19	M10L2	Dot Plots and Histograms	Example 2	Page :545

A park ranger at a state park was asked the question *How many daily visitors attended the park each day for 20 days?*. The table shows the results.

Construct a histogram to represent the data.

Daily Visitors				
108	209	171	152	236
165	244	263	212	161
327	185	192	226	137
193	235	207	382	241

19	M10L2	Dot Plots and Histograms	2 - 6	Page :547 - 548

2. The table shows the results of asking a group of teachers the question *How many students are in your homeroom?*. Construct a histogram to represent the data. (Example 2)

Homeroom Class Size						
17	26	20	23	19	23	22
22	24	19	20	21	20	23

Test Practice

3. The table shows the results of asking a group of students the question *How many hours per month do you volunteer?*. Construct a histogram to represent the data. (Example 2)

Hours Spent Volunteering						
48	30	21	10	1	40	19
10	5	40	39	20	9	40
31	45	29	40	18	49	31
24	32	15	0	15	27	12

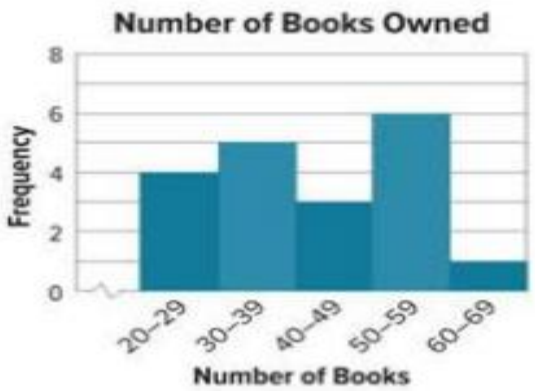
4. Open Response Petra surveyed the members of her dance class by asking the question *How many hours outside of class do you usually practice dance each week?*. The results are shown in the table. Construct a dot plot of the data.

Number of Hours				
1	3	4	5	2
2	2	4	3	1
3	3	2	4	2

Apply

5. Lou wanted to determine how much his friends pay for video games. He surveyed them using the question *How much did you pay for the last video game you bought?* The responses were $29, $45, $50, $55, $34, $28, $35, $35, $45, $30, $34, and $55. How many more games cost between $30 and $39 than between $40 and $49?

6. Provide a data set that can be represented by the histogram shown.



T. Alaa Elatawy

1. Cameron surveyed her friends about the number of apps they use. The responses were 15, 16, 18, 9, 18, 4, 19, 20, 17, and 36 apps. Use the range and interquartile range to describe how the data vary. (Example 1)

2. The table shows the number of hours different animals spend sleeping per day. Use the range and interquartile range to describe how the data vary. (Example 1)

Time Animals Spend Sleeping (h)					
12	20	16	11	4	2

3. The box plot shows the ages of vice presidents when they took office. Describe the distribution of the data. What does it tell you about the ages of vice presidents? (Example 2)



4. The ages of children taking a hip-hop dance class are 10, 9, 9, 7, 12, 14, 14, 9, and 16 years old. Construct a box plot of the data. Then describe the distribution of the data. (Example 3)

Test Practice

5. Open Response The cost of tents on sale at a sporting goods store are $66, $72, $78, $69, $64, $70, $67, $72, and $66. Use the range and interquartile range to describe how the data vary.



T. Alaa Elatawy