

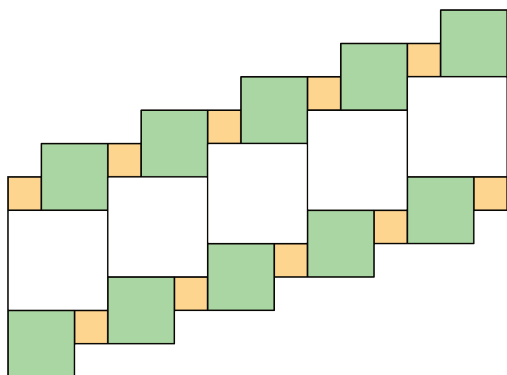
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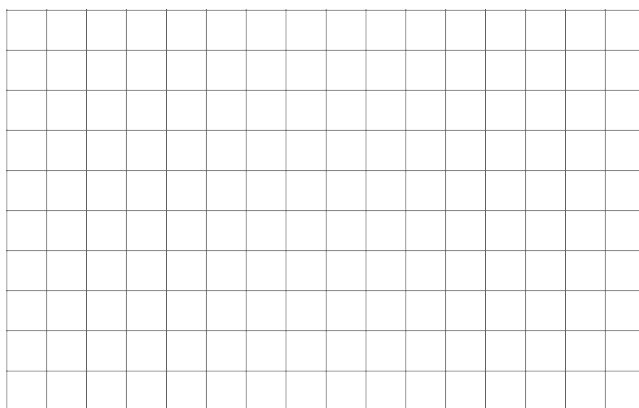
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# Unit 1, Lesson 1: Tiling the Plane

1. Which square—large, medium, or small—covers more of the plane? Explain your reasoning.



2. Draw three different quadrilaterals, each with an area of 12 square units.



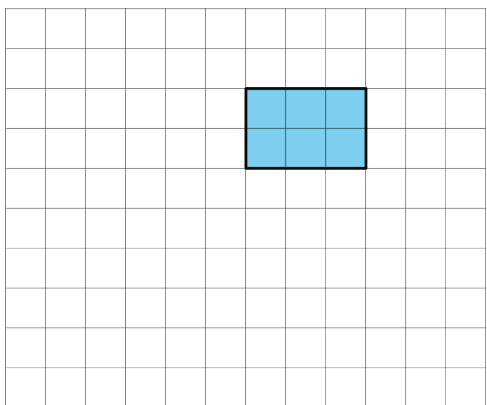
3. Use copies of the rectangle to show how a rectangle could:

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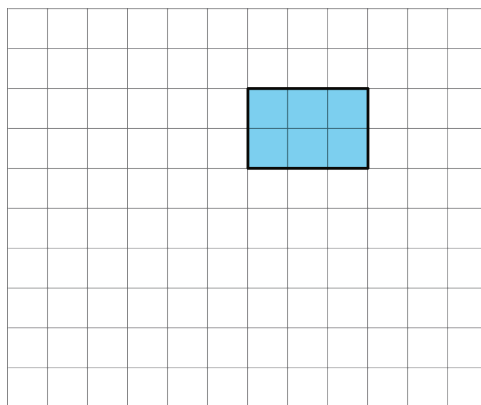
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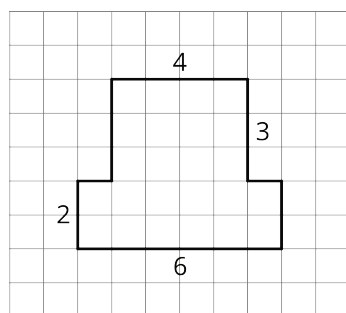
a. tile the plane.



b. *not* tile the plane.



4. The area of this shape is 24 square units. Which of these statements is true about the area? Select **all** that apply.



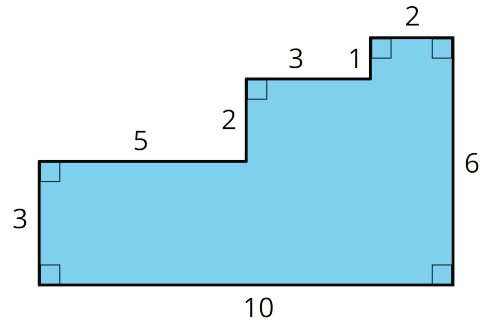
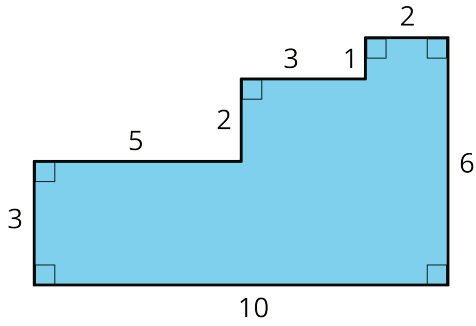
- A. The area can be found by counting the number of squares that touch the edge of the shape.
- B. It takes 24 grid squares to cover the shape without gaps and overlaps.
- C. The area can be found by multiplying the sides lengths that are 6 units and 4 units.
- D. The area can be found by counting the grid squares inside the shape.
- E. The area can be found by adding  $4 \times 3$  and  $6 \times 2$ .

5. Here are two copies of the same figure. Show two different ways for finding the area of the shaded region. All angles are right angles.

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6. Which shape has a larger area: a rectangle that is 7 inches by  $\frac{3}{4}$  inch, or a square with side length of  $2\frac{1}{2}$  inches? Show your reasoning.

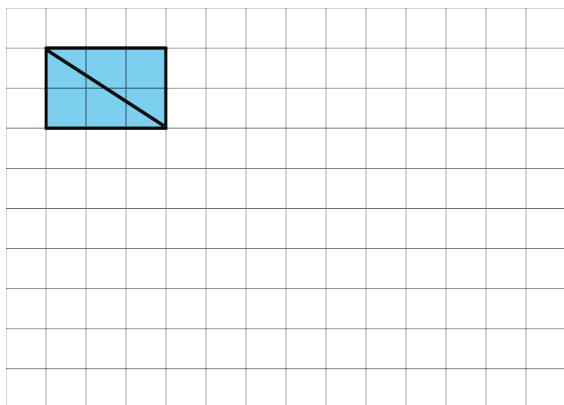
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# Unit 1, Lesson 2: Finding Area by Decomposing and Rearranging

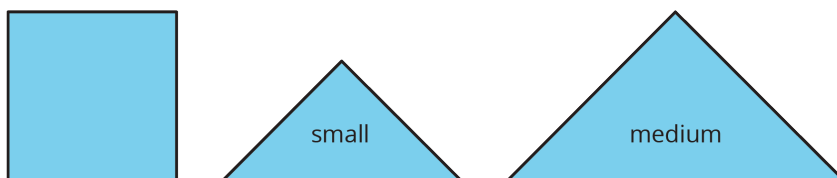
1. The diagonal of a rectangle is shown.



- a. Decompose the rectangle along the diagonal, and recompose the two pieces to make a *different* shape.
- b. How does the area of this new shape compare to the area of the original rectangle? Explain how you know.

2.

The area of the square is 1 square unit. Two small triangles can be put together to make a square or to make a medium triangle.



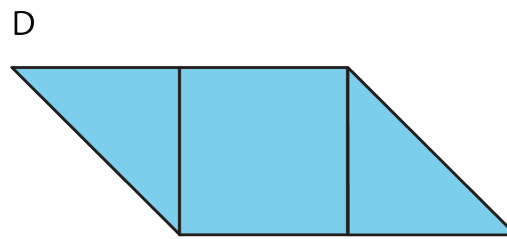
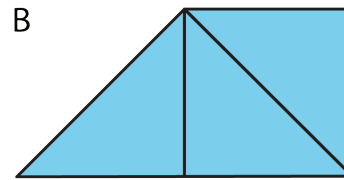
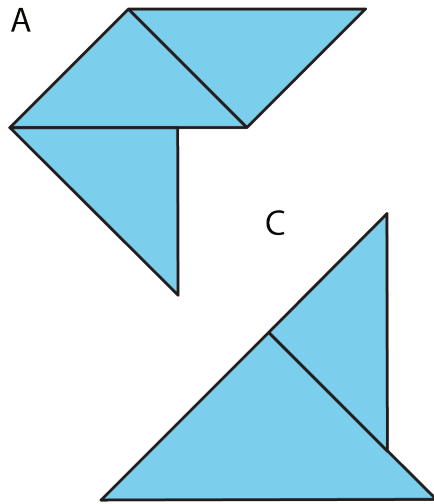
Which figure also has an area of  $1\frac{1}{2}$  square units? Select **all** that apply.



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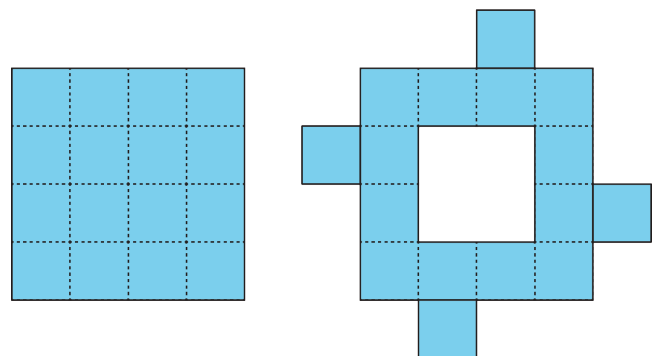
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3. Priya decomposed a square into 16 smaller, equal-size squares and then cut out 4 of the small squares and attached them around the outside of original square to make a new figure.

How does the area of her new figure compare with that of the original square?



- A. The area of the new figure is greater.
- B. The two figures have the same area.
- C. The area of the original square is greater.
- D. We don't know because neither the side length nor the area of the original square is known.

4. The area of a rectangular playground is 78 square meters. If the length of the playground is 13 meters, what is its width?

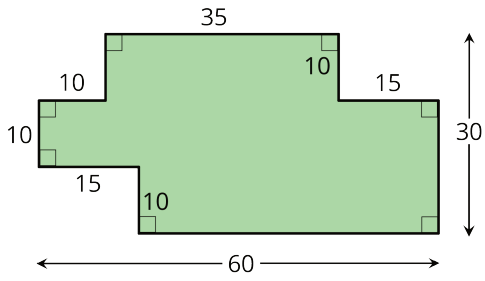
(from Unit 1, Lesson 1)

5. A student said, "We can't find the area of the shaded region because the shape has many different measurements, instead of just a length and a width that we could multiply."

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Explain why the student's statement about area is incorrect.

(from Unit 1, Lesson 1)

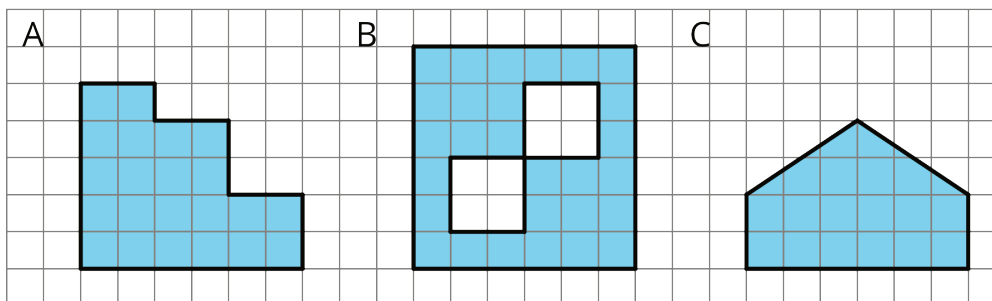
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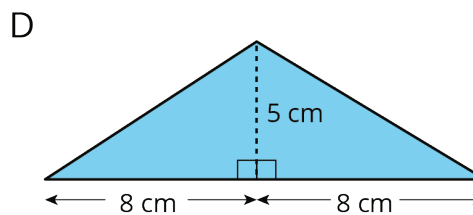
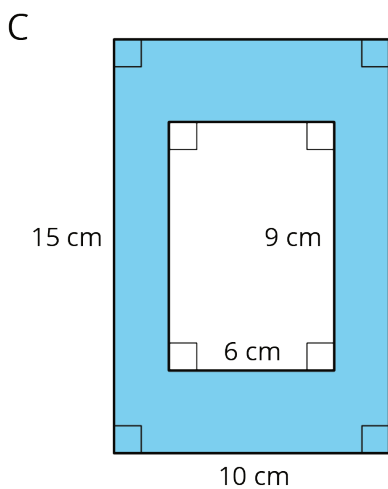
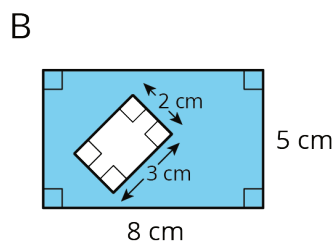
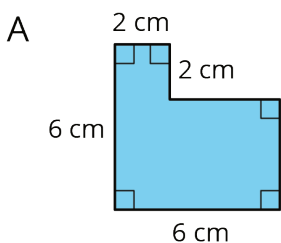
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# Unit 1, Lesson 3: Reasoning to Find Area

1. Find the area of each shaded region. Show your reasoning.



2. Find the area of each shaded region. Show or explain your reasoning.

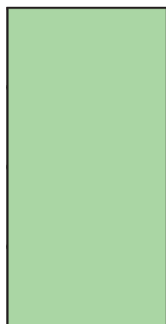


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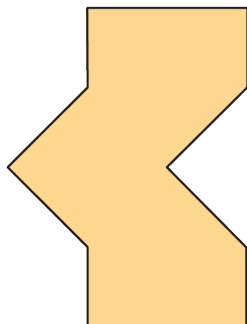
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3. Two plots of land have very different shapes. Noah said that both plots of land have the same area.



plot A



plot B

Do you agree with Noah? Explain your reasoning.

4. A homeowner is deciding on the size of tiles to use to fully tile a rectangular wall in her bathroom that is 80 inches by 40 inches. The tiles are squares and come in three side lengths: 8 inches, 4 inches, and 2 inches. State if you agree with each statement about the tiles. Explain your reasoning.

- Regardless of the size she chooses, she will need the same number of tiles.
- Regardless of the size she chooses, the area of the wall that is being tiled is the same.
- She will need two 2-inch tiles to cover the same area as one 4-inch tile.
- She will need four 4-inch tiles to cover the same area as one 8-inch tile.
- If she chooses the 8-inch tiles, she will need a quarter as many tiles as she would with 2-inch tiles.

(from Unit 1, Lesson 2)

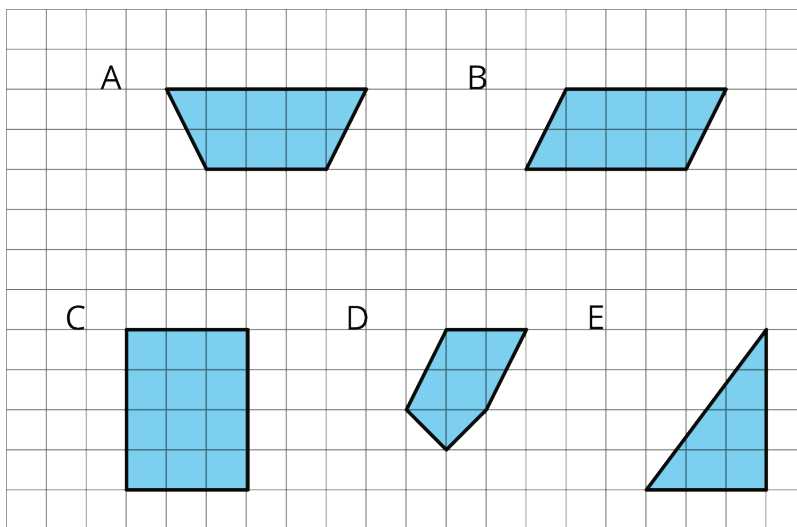
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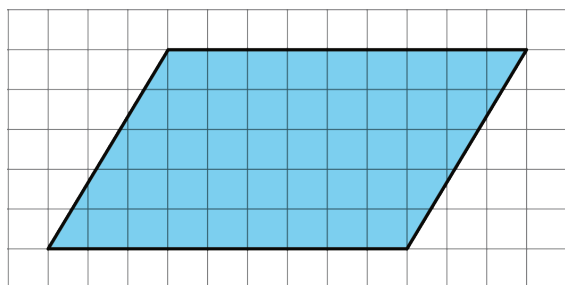
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# Unit 1, Lesson 4: Parallelograms

1. Select **all** of the parallelograms. For each figure that is *not* selected, explain how you know it is not a parallelogram.

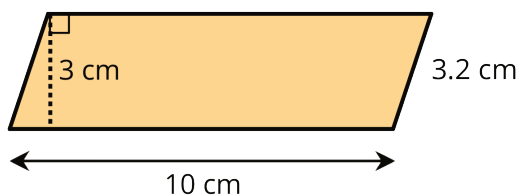


2. a. Decompose and rearrange this parallelogram to make a rectangle.



b. What is the area of the parallelogram? Explain your reasoning.

3. Find the area of the parallelogram.

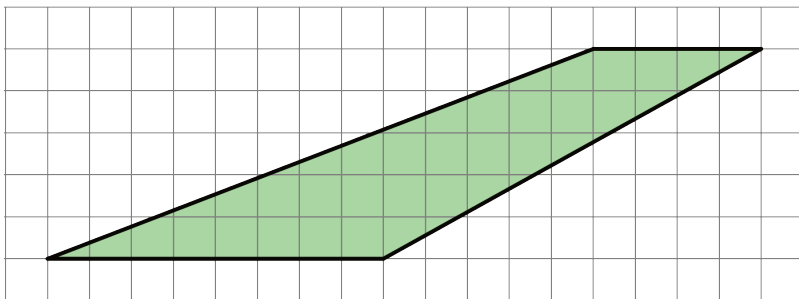


4. Explain why this quadrilateral is *not* a parallelogram.

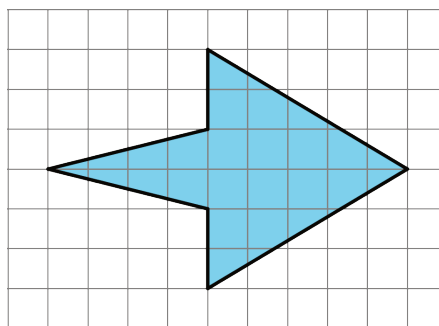
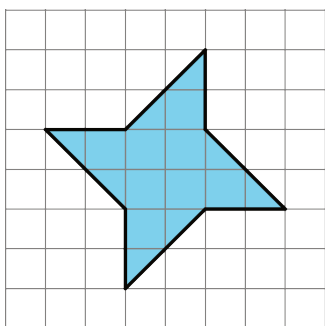
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5. Find the area of each shape. Show your reasoning.



(from Unit 1, Lesson 3)

6. Find the areas of the rectangles with the following side lengths.

a. 5 in and  $\frac{1}{3}$  in

c.  $\frac{5}{2}$  in and  $\frac{4}{3}$  in

b. 5 in and  $\frac{4}{3}$  in

d.  $\frac{7}{6}$  in and  $\frac{6}{7}$  in

(from Unit 1, Lesson 1)

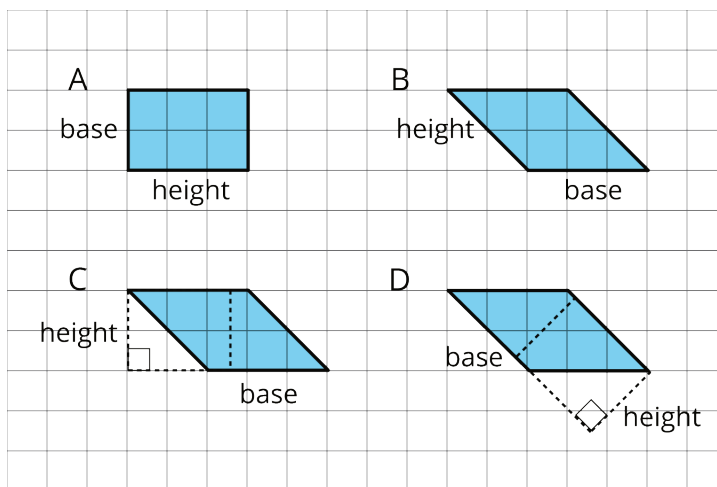
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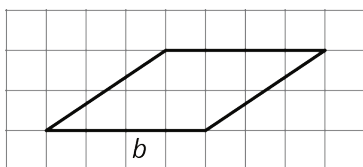
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# Unit 1, Lesson 5: Bases and Heights of Parallelograms

1. Select **all** parallelograms that have a correct height labeled for the given base.

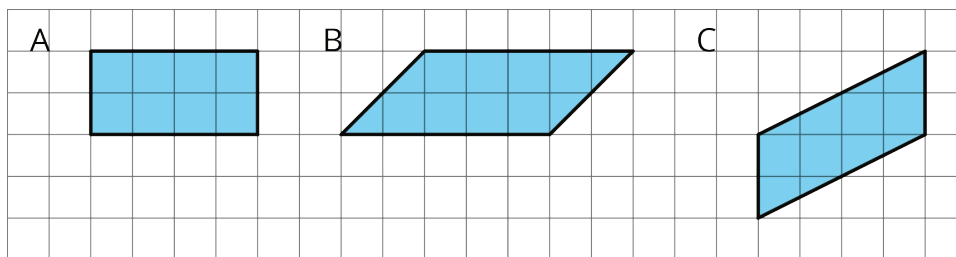


2. The side labeled  $b$  has been chosen as the base for this parallelogram.



Draw a segment showing the height corresponding to that base.

3. Find the area of each parallelogram.

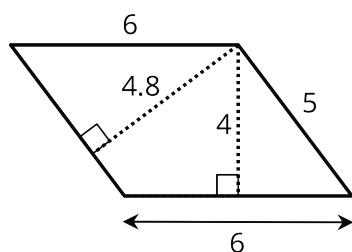


4. If the side that is 6 units long is the base of this parallelogram, what is its corresponding height?

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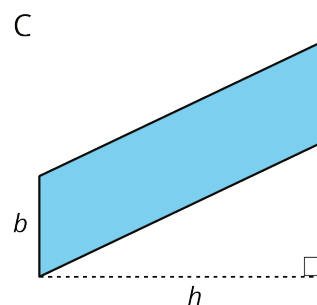
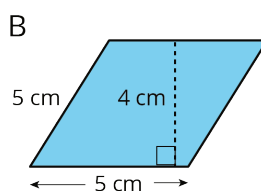
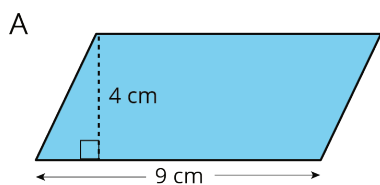
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- A. 6 units
- B. 4.8 units
- C. 4 units
- D. 5 units

5. Find the area of each parallelogram.



6. Do you agree with each of these statements? Explain your reasoning.

- a. A parallelogram has six sides.
- b. Opposite sides of a parallelogram are parallel.
- c. A parallelogram can have one pair or two pairs of parallel sides.
- d. All sides of a parallelogram have the same length.
- e. All angles of a parallelogram have the same measure.

(from Unit 1, Lesson 4)

7. A square with an area of 1 square meter is decomposed into 9 identical small squares. Each small square is decomposed into two identical triangles.

- a. What is the area, in square meters, of 6 triangles? If you get stuck, draw a diagram.
- b. How many triangles are needed to compose a region that is  $1\frac{1}{2}$  square meters?



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(from Unit 1, Lesson 2)

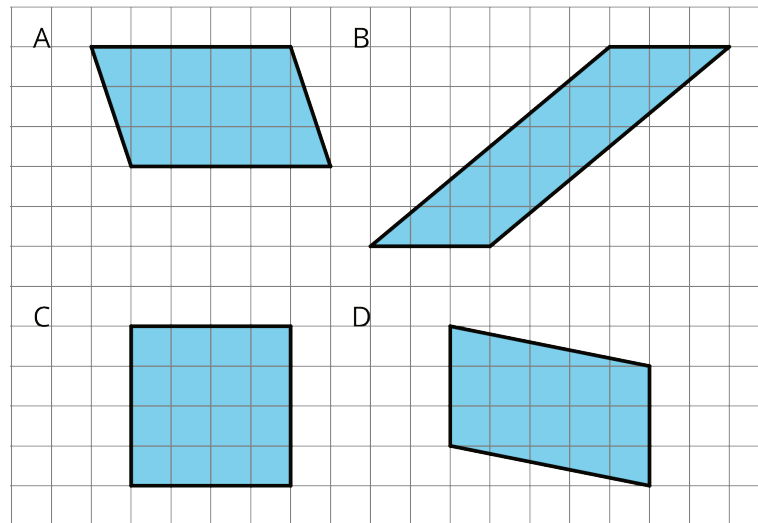
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## Unit 1, Lesson 6: Area of Parallelograms

1. Which three of these parallelograms have the same area as each other?



2. Which of the following pairs of base and height produces the greatest area? All measurements are in centimeters.

- A.  $b = 4, h = 3.5$
- B.  $b = 0.8, h = 20$
- C.  $b = 6, h = 2.25$
- D.  $b = 10, h = 1.4$

3. Here are the areas of three parallelograms. Use them to find the missing length (labeled with a "?") on each parallelogram.

A: 10 square units

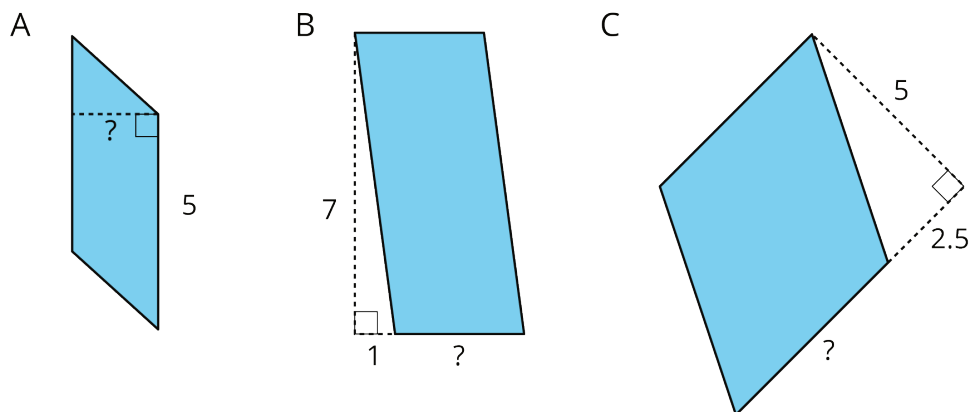
B: 21 square units

C: 25 square units

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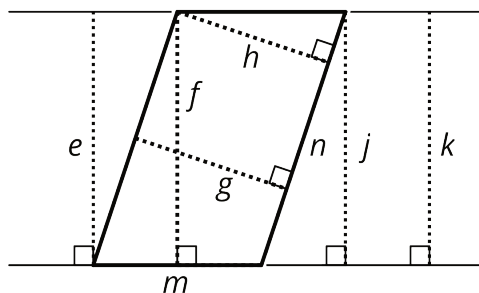


4. The Dockland Building in Hamburg, Germany is shaped like a parallelogram.



If the length of the building is 86 meters and its height is 55 meters, what is the area of this face of the building?

5. Select **all** segments that could represent a corresponding height if the side  $m$  is the base.



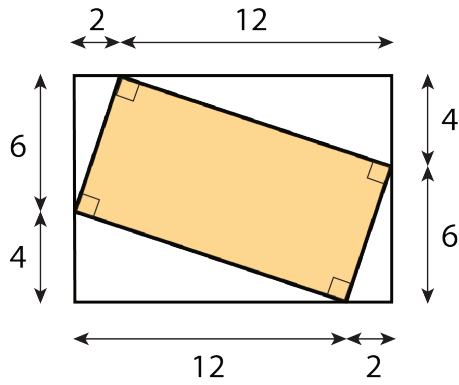
(from Unit 1, Lesson 5)

6. Find the area of the shaded region. All measurements are in centimeters. Show your reasoning.

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(from Unit 1, Lesson 3)

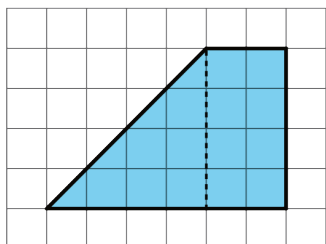
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# Unit 1, Lesson 7: From Parallelograms to Triangles

1. To decompose a quadrilateral into two identical shapes, Clare drew a dashed line as shown in the diagram.



a. She said the that two resulting shapes have the same area. Do you agree? Explain your reasoning.

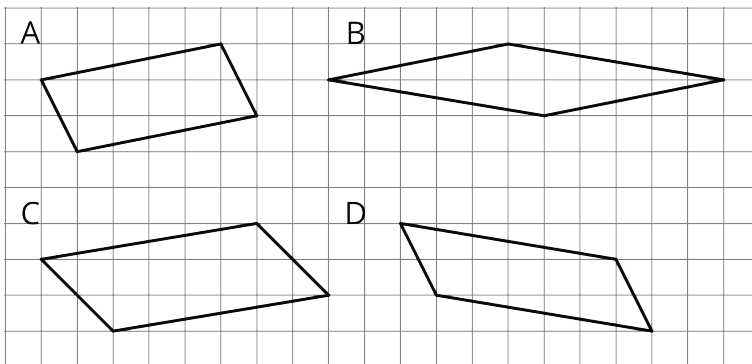
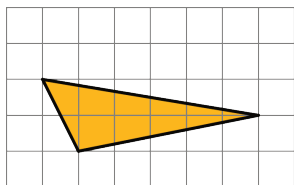
b. Did Clare partition the figure into two identical shapes? Explain your reasoning.

2. Triangle R is a right triangle. Can we use two copies of Triangle R to compose a parallelogram that is not a square?



If so, explain how or sketch a solution. If not, explain why not.

3. Two copies of this triangle are used to compose a parallelogram. Which parallelogram *cannot* be a result of the composition? If you get stuck, consider using tracing paper.

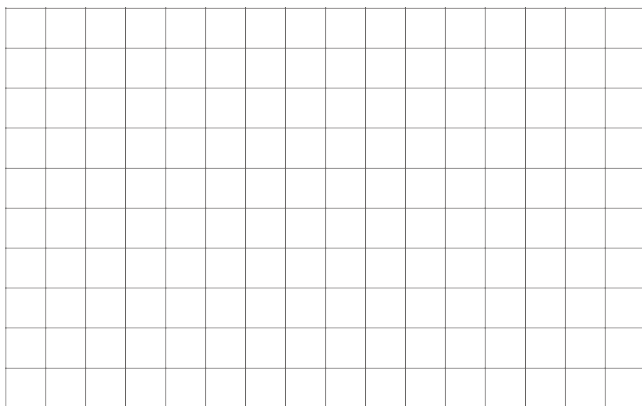


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4. a. On the grid, draw at least three different quadrilaterals that can each be decomposed into two identical triangles with a single cut (show the cut line). One or more of the quadrilaterals should have non-right angles.

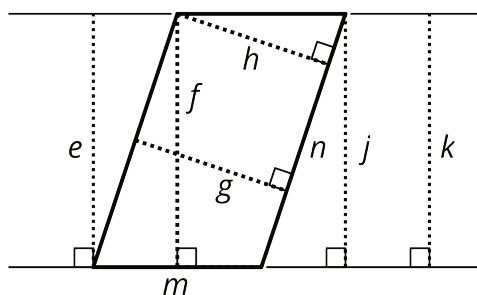


- b. Identify the type of each quadrilateral.

5. a. A parallelogram has a base of 9 units and a corresponding height of  $\frac{2}{3}$  units. What is its area?
- b. A parallelogram has a base of 9 units and an area of 12 square units. What is the corresponding height for that base?
- c. A parallelogram has an area of 7 square units. If the height that corresponds to a base is  $\frac{1}{4}$  unit, what is the base?

(from Unit 1, Lesson 6)

6. Select **all** segments that could represent a corresponding height if the side  $n$  is the base.



(from Unit 1, Lesson 5)

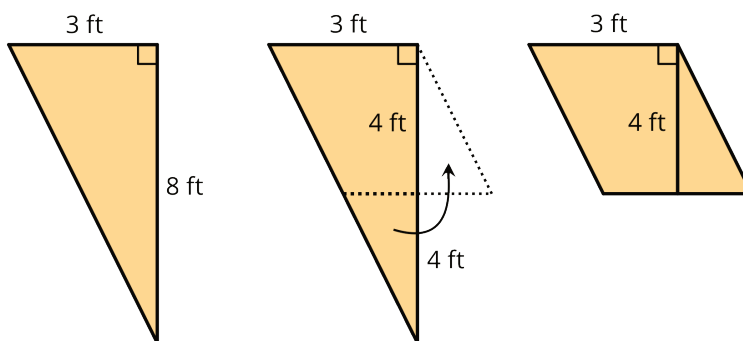
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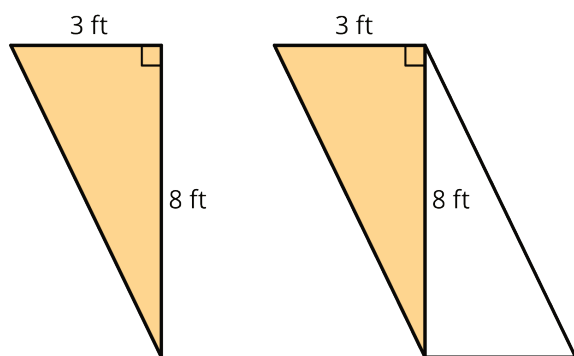
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# Unit 1, Lesson 8: Area of Triangles

1. To find the area of this right triangle, Diego and Jada used different strategies. Diego drew a line through the midpoints of the two longer sides, which decomposes the triangle into a trapezoid and a smaller triangle. He then rearranged the two shapes into a parallelogram.



Jada made a copy of the triangle, rotated it, and lined it up against one side of the original triangle so that the two triangles make a parallelogram.

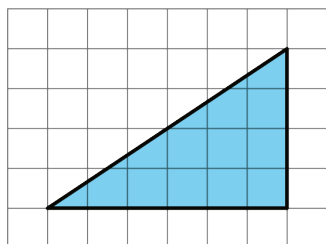


a. Explain how Diego might use his parallelogram to find the area of the triangle.

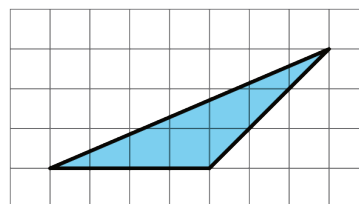
b. Explain how Jada might use her parallelogram to find the area of the triangle.

2. Find the area of the triangle. Explain or show your reasoning.

a.



b.

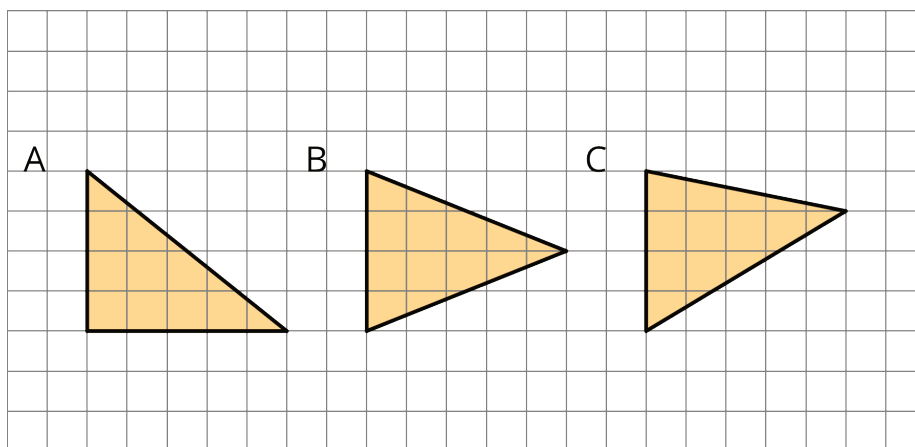


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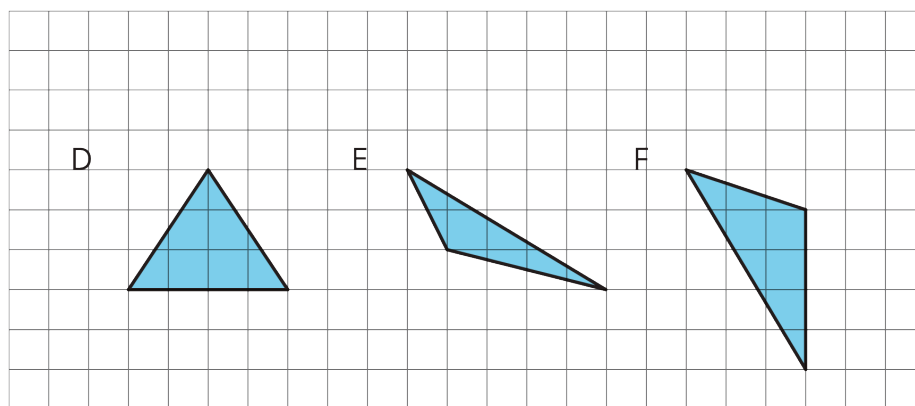
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3. Which of the three triangles has the greatest area? Show your reasoning.



If you get stuck, use what you know about the area of parallelograms to help you.

4. Draw an identical copy of each triangle such that the two copies together form a parallelogram. If you get stuck, consider using tracing paper.



(from Unit 1, Lesson 7)

5. a. A parallelogram has a base of 3.5 units and a corresponding height of 2 units. What is its area?
- b. A parallelogram has a base of 3 units and an area of 1.8 square units. What is the corresponding height for that base?



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c. A parallelogram has an area of 20.4 square units. If the height that corresponds to a base is 4 units, what is the base?

(from Unit 1, Lesson 6)

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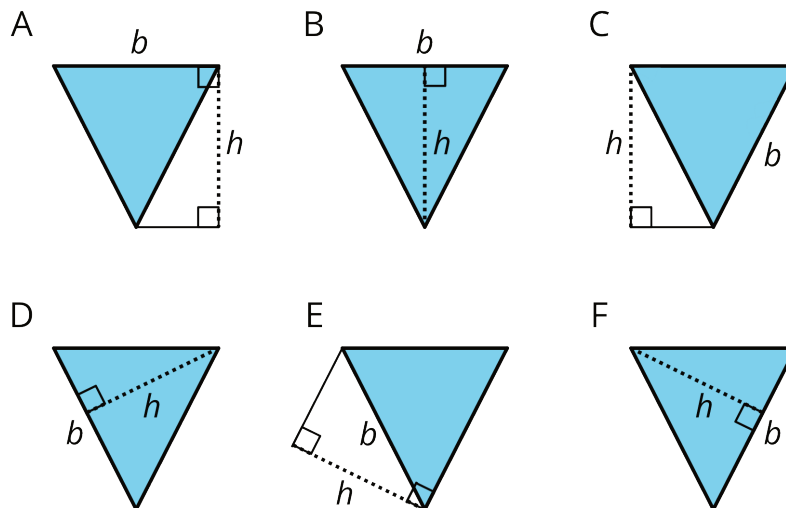
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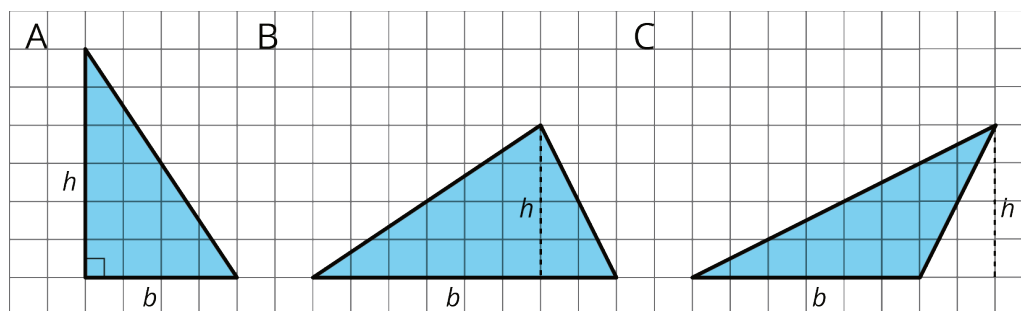
# Unit 1, Lesson 9: Formula for the Area of a Triangle

1.

Select **all** drawings in which a corresponding height  $h$  for a given base  $b$  is correctly identified.



2. For each triangle, a base and its corresponding height are labeled.



a. Find the area of each triangle.

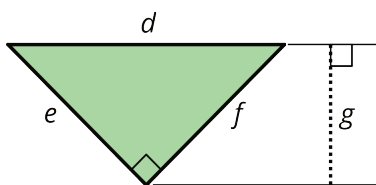
b. How is the area related to the base and its corresponding height?

3. Here is a right triangle. Name a corresponding height for each base.

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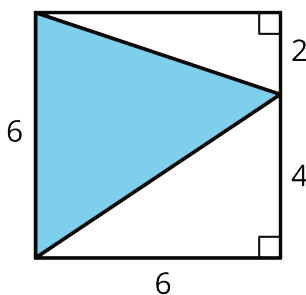
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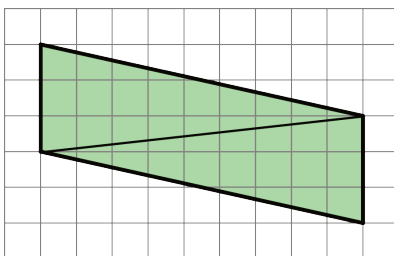
- a. Side  $d$
- b. Side  $e$
- c. Side  $f$

4. Find the area of the shaded triangle. Show your reasoning.



(from Unit 1, Lesson 8)

5. Andre drew a line connecting two opposite corners of a parallelogram. Select **all** true statements about the triangles created by the line Andre drew.



- A. Each triangle has two sides that are 3 units long.
- B. Each triangle has a side that is the same length as the diagonal line.
- C. Each triangle has one side that is 3 units long.
- D. When one triangle is placed on top of the other and their sides are aligned, we will see that one triangle is larger than the other.
- E. The two triangles have the same area as each other.

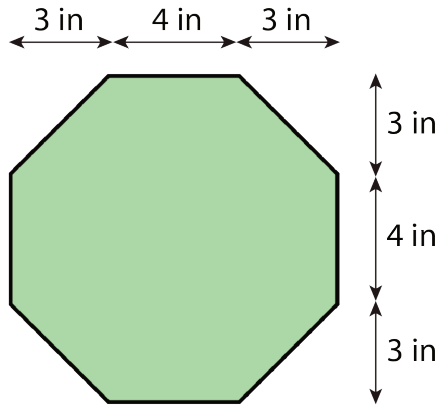
(from Unit 1, Lesson 7)

6. Here is an octagon.

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(from Unit 1, Lesson 3)

- a. While estimating the area of the octagon, Lin reasoned that it must be less than 100 square inches. Do you agree? Explain your reasoning.
- b. Find the exact area of the octagon. Show your reasoning.

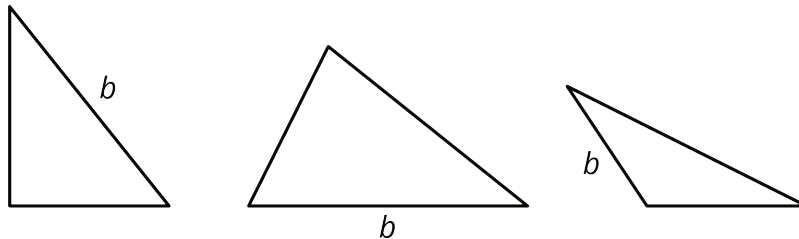
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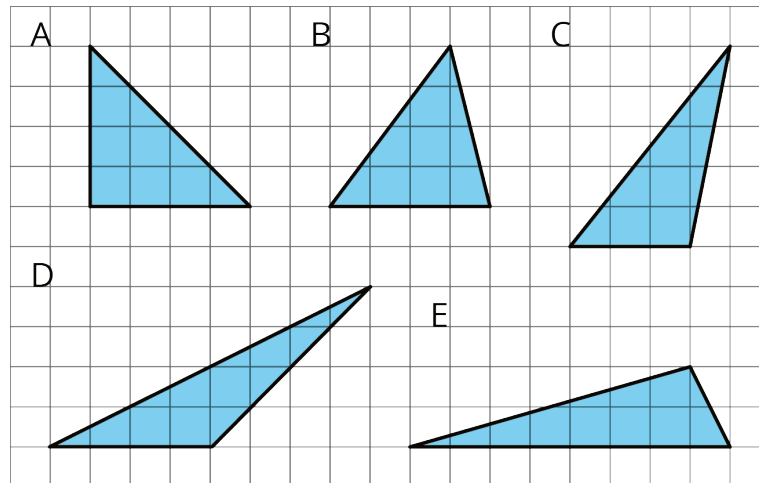
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# Unit 1, Lesson 10: Bases and Heights of Triangles

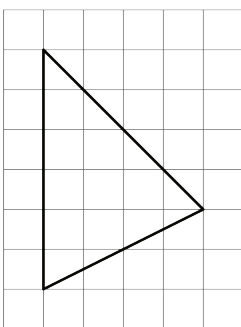
1. For each triangle, a base is labeled  $b$ . Draw a line segment that shows its corresponding height. Use an index card to help you draw a straight line.



2. Select all triangles that have an area of 8 square units. Explain how you know.



3. Find the area of the triangle. Show your reasoning.



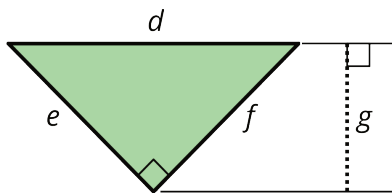
If you get stuck, carefully consider which side of the triangle to use as the base.

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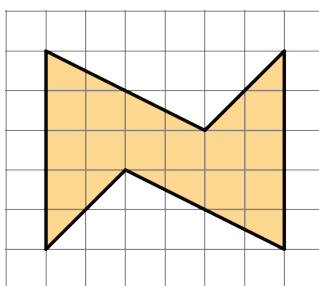
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4. Can side  $d$  be the base for this triangle? If so, which length would be the corresponding height? If not, explain why not.

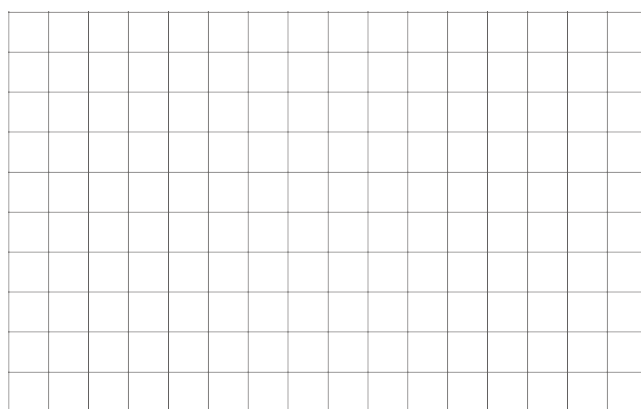


5. Find the area of this shape. Show your reasoning.



(from Unit 1, Lesson 3)

6. On the grid, sketch two different parallelograms that have equal area. Label a base and height of each and explain how you know the areas are the same.



(from Unit 1, Lesson 6)

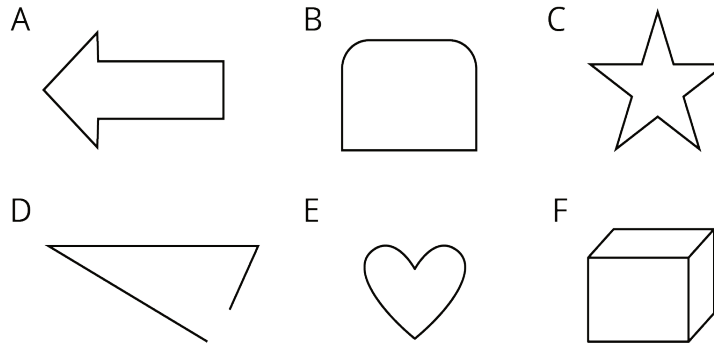
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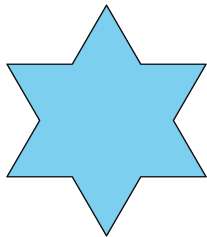
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# Unit 1, Lesson 11: Polygons

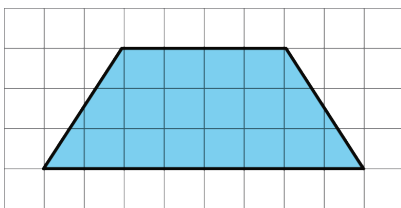
1. Select **all** the polygons.



2. Mark each vertex with a large dot. How many edges and vertices does this polygon have?



3. Find the area of this trapezoid. Explain or show your strategy.

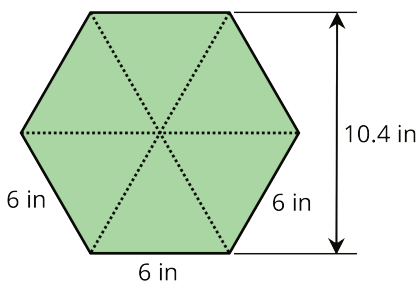


4. Lin and Andre used different methods to find the area of a regular hexagon with 6-inch sides. Lin decomposed the hexagon into six identical triangles. Andre decomposed the hexagon into a rectangle and two triangles.

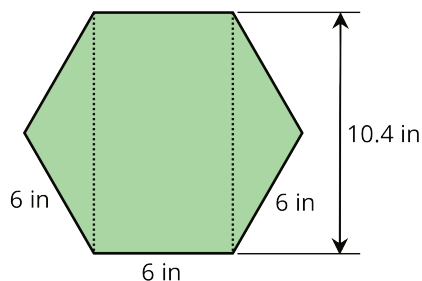
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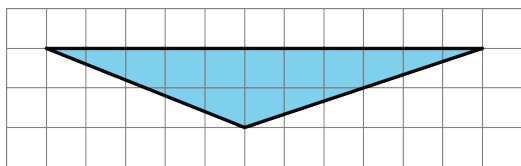
Lin's method



Andre's method

Find the area of the hexagon using each person's method. Show your reasoning.

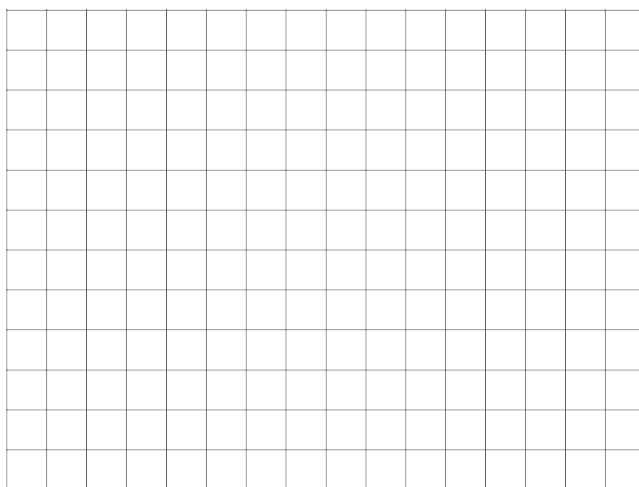
5. a. Identify a base and a corresponding height that can be used to find the area of this triangle. Label the base  $b$  and the corresponding height  $h$ .



2. Find the area of the triangle. Show your reasoning.

(from Unit 1, Lesson 9)

6. On the grid, draw three different triangles with an area of 12 square units. Label the base and height of each triangle.



(from Unit 1, Lesson 10)



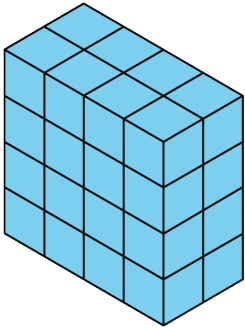
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## Unit 1, Lesson 12: What is Surface Area?

1. What is the surface area of this rectangular prism?



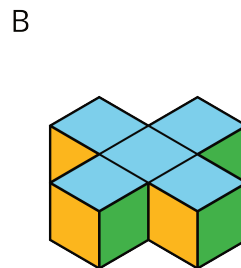
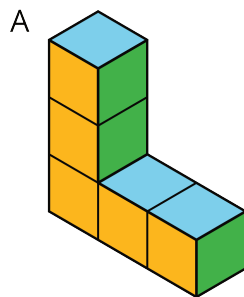
- A. 16 square units
- B. 32 square units
- C. 48 square units
- D. 64 square units

2. Which description can represent the surface area of this trunk?

- A. The number of square inches that cover the top of the trunk.
- B. The number of square feet that cover all the outside faces of the trunk.
- C. The number of square inches of horizontal surface inside the trunk.
- D. The number of cubic feet that can be packed inside the trunk.



3. Which figure has a greater surface area?



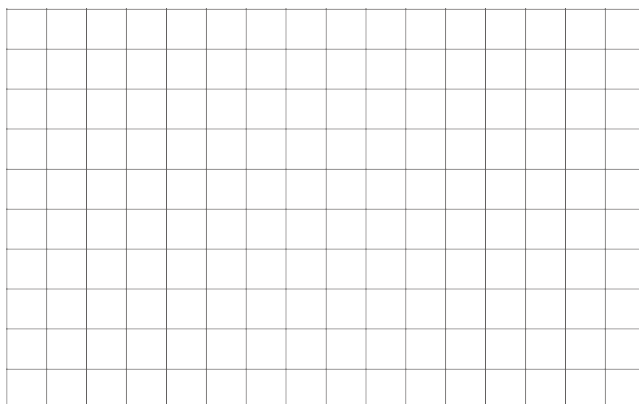
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4. A rectangular prism is 4 units high, 2 units wide, and 6 units long. What is its surface area in square units? Explain or show your reasoning.

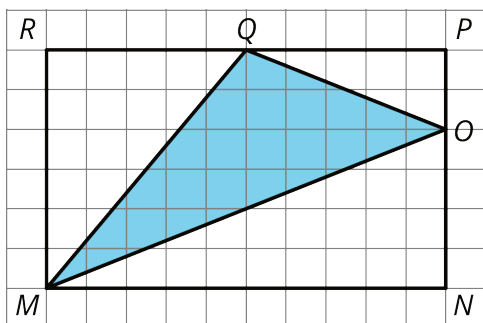
5. Draw an example of each of the following triangles on the grid.



- a. A right triangle with an area of 6 square units.
- b. An acute triangle with an area of 6 square units.
- c. An obtuse triangle with an area of 6 square units.

(from Unit 1, Lesson 9)

6. Find the area of triangle  $MOQ$  in square units. Show your reasoning.



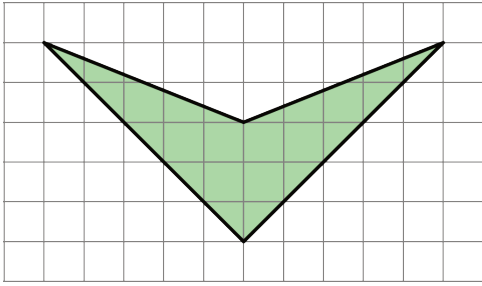
(from Unit 1, Lesson 10)

7. Find the area of this shape. Show your reasoning.

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(from Unit 1, Lesson 3)

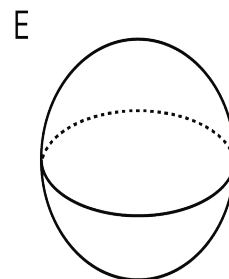
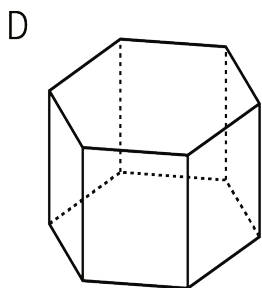
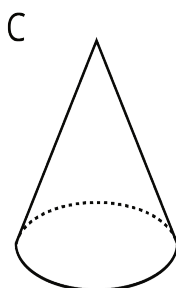
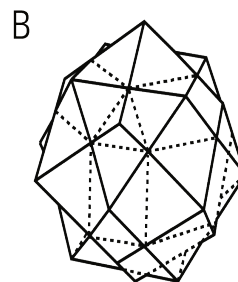
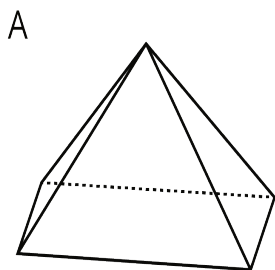
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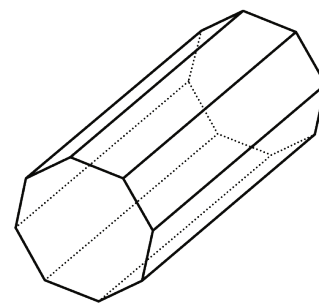
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# Unit 1, Lesson 13: Polyhedra

1. Select **all** the polyhedra.



2. a. Is this polyhedron a prism, a pyramid, or neither? Explain how you know.  
 b. How many faces, edges, and vertices does it have?



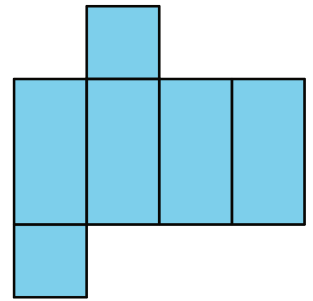
3. Tyler said this net cannot be a net for a square prism because not all the faces are squares.

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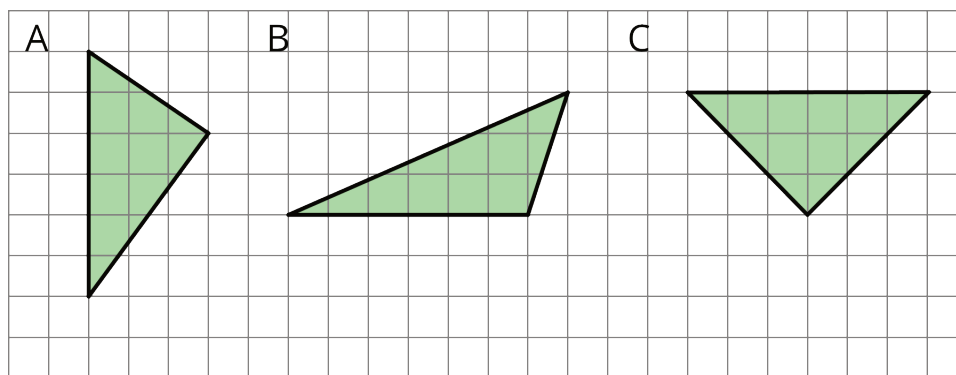
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Do you agree with Tyler's statement? Explain your reasoning.



4. Explain why each of the following triangles has an area of 9 square units.



(from Unit 1, Lesson 8)

5.
  - a. A parallelogram has a base of 12 meters and a height of 1.5 meters. What is its area?
  - b. A triangle has a base of 16 inches and a height of  $\frac{1}{8}$  inches. What is its area?
  - c. A parallelogram has an area of 28 square feet and a height of 4 feet. What is its base?
  - d. A triangle has an area of 32 square millimeters and a base of 8 millimeters. What is its height?

(from Unit 1, Lesson 9)

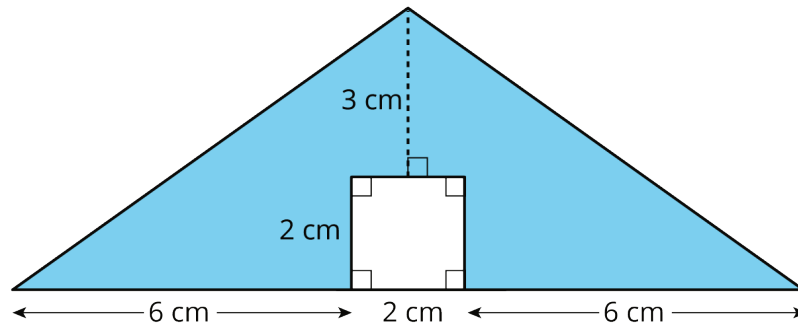
6. Find the area of the shaded region. Show or explain your reasoning.

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E



(from Unit 1, Lesson 3)

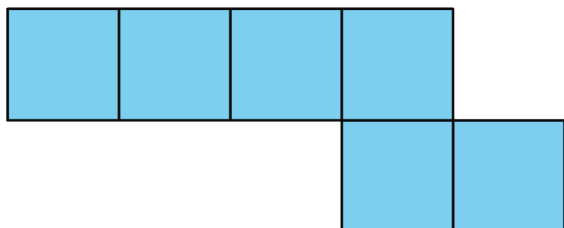
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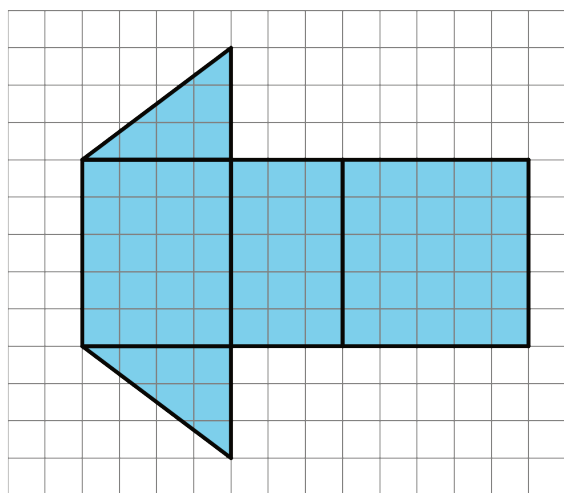
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## Unit 1, Lesson 14: Nets and Surface Area

1. Can the following net be assembled into a cube? Explain how you know. Label parts of the net with letters or numbers if it helps your explanation.



2. a. What polyhedron can be assembled from this net? Explain how you know.



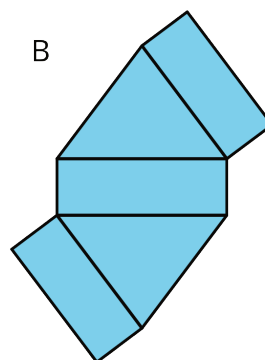
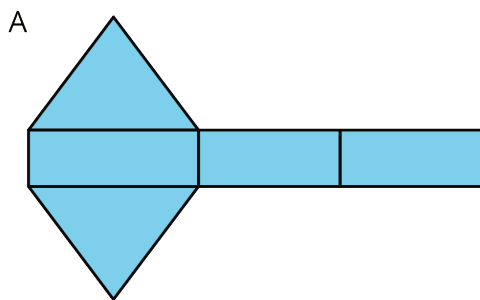
- b. Find the surface area of this polyhedron. Show your reasoning.

3. Here are two nets. Mai said that both nets can be assembled into the same triangular prism. Do you agree? Explain or show your reasoning.

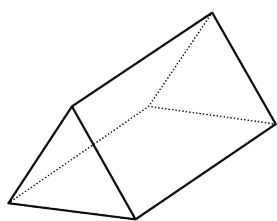
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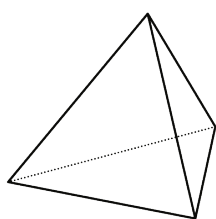
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4. Here are two three-dimensional figures.



A



B

Tell whether each of the following statements describes Figure A, Figure B, both, or neither.

- |  |   |
|--|---|
| <p>a. This figure is a polyhedron.</p> <p>b. This figure has triangular faces.</p> <p>c. There are more vertices than edges in this figure.</p> <p>d. This figure has rectangular faces.</p> | <p>e. This figure is a pyramid.</p> <p>f. There is exactly one face that can be the base for this figure.</p> <p>g. The base of this figure is a triangle.</p> <p>h. This figure has two identical and parallel faces that can be the base.</p> |
|--|---|

(from Unit 1, Lesson 13)

5. Select **all** units that can be used for surface area. Explain why the others cannot be used for surface area.

- A. square meters
- B. feet
- C. centimeters
- D. cubic inches



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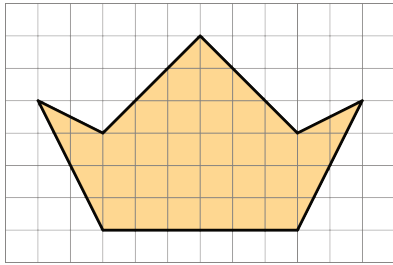
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E. square inches

F. square feet

(from Unit 1, Lesson 12)

6. Find the area of this polygon. Show your reasoning.



(from Unit 1, Lesson 11)

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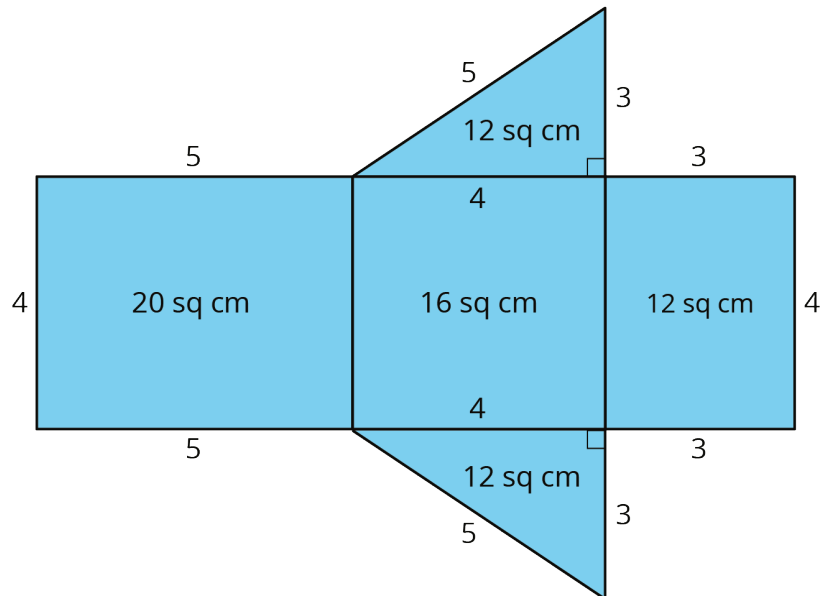
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## Unit 1, Lesson 15: More Nets, More Surface Area

1. Jada drew a net for a polyhedron and calculated its surface area.

a. What polyhedron can be assembled from this net?

b. Jada made some mistakes in her area calculation. What were the mistakes?



c. Find the surface area of the polyhedron. Show your reasoning.

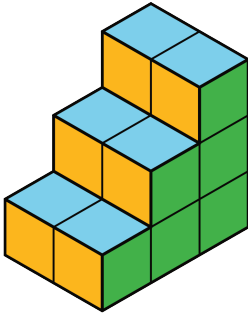
2. A cereal box is 8 inches by 2 inches by 12 inches. What is its surface area? Show your reasoning. If you get stuck, consider drawing a sketch of the box or its net and labeling the edges with their measurements.

3. Twelve cubes are stacked to make this figure.

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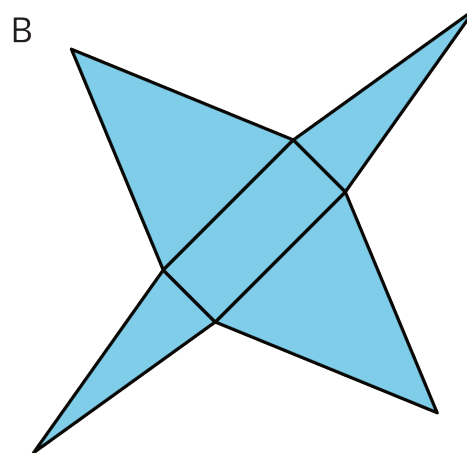
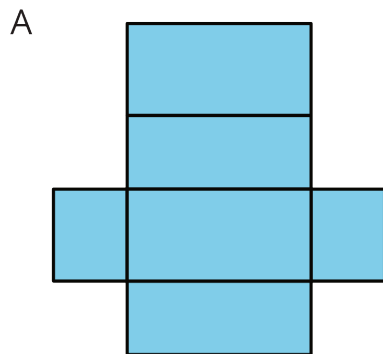
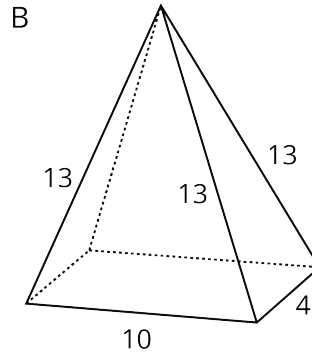
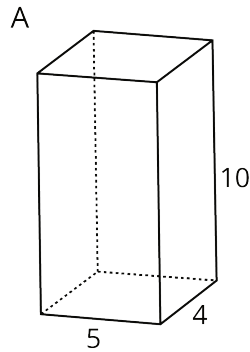


a. What is its surface area?

b. How would the surface area change if the top two cubes are removed?

(from Unit 1, Lesson 12)

4. Here are two polyhedra and their nets. Label all edges in the net with the correct lengths.

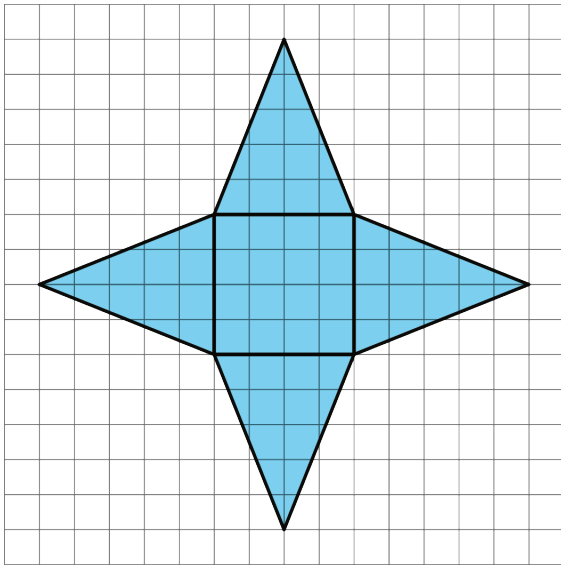


5. a. What three-dimensional figure can be assembled from the net?

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(from Unit 1, Lesson 14)

b. What is the surface area of the figure? (One grid square is 1 square unit.)

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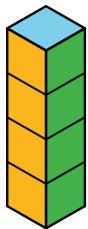
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## Unit 1, Lesson 16: Distinguishing Between Surface Area and Volume

1. Match each quantity with an appropriate unit of measurement.

- |  |                       |
|--|-----------------------|
| A. The surface area of a tissue box    | 1. Square meters      |
| B. The amount of soil in a planter box | 2. Yards              |
| C. The area of a parking lot           | 3. Cubic inches       |
| D. The length of a soccer field        | 4. Cubic feet         |
| E. The volume of a fish tank           | 5. Square centimeters |

2. Here is a figure built from snap cubes.



- Find the volume of the figure in cubic units.
- Find the surface area of the figure in square units.

c. True or false: If we double the number of cubes being stacked, both the volume and surface area will double. Explain or show how you know.

3. Lin said, "Two figures with the same volume also have the same surface area."

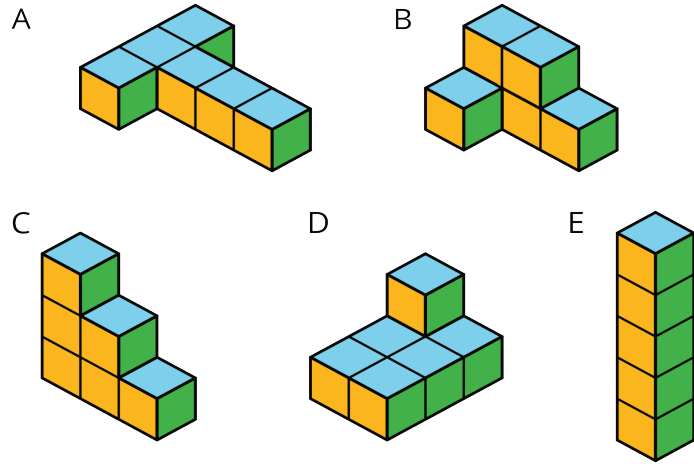
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a. Which two figures suggest that her statement is true?

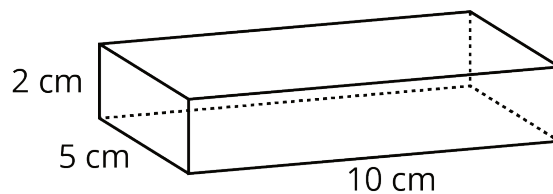
b. Which two figures could show that her statement is *not* true?



4. Draw a pentagon (five-sided polygon) that has an area of 32 square units. Label all relevant sides or segments with their measurements, and show that the area is 32 square units.

(from Unit 1, Lesson 11)

5. a. Draw a net for this rectangular prism.  
b. Find the surface area of the rectangular prism.



(from Unit 1, Lesson 15)

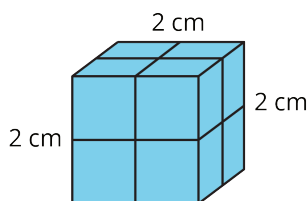
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## Unit 1, Lesson 17: Squares and Cubes

1. What is the volume of this cube?



2. a. Decide if each number on the list is a perfect square.

A. 16

E. 125

b. Write a sentence that explains your reasoning.

B. 20

F. 144

C. 25

G. 225

D. 100

H. 10,000

3. a. Decide if each number on the list is a perfect cube.

A. 1

E. 27

b. Explain what a perfect cube is.

B. 3

F. 64

C. 8

G. 100

D. 9

H. 125

4. a. A square has side length 4 cm. What is its area?

b. The area of a square is  $49 \text{ m}^2$ . What is its side length?

c. A cube has edge length 3 in. What is its volume?

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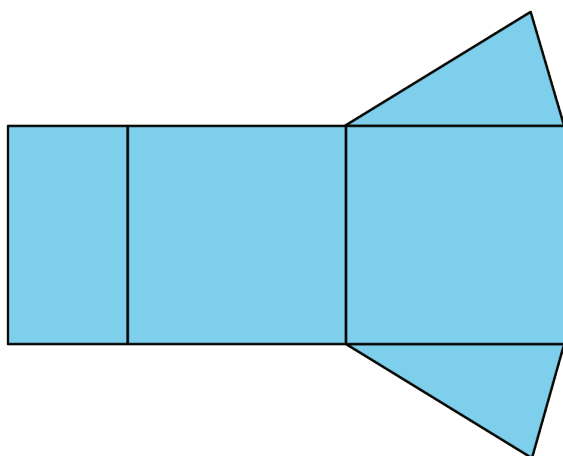
5. Prism A and Prism B are rectangular prisms. Prism A is 3 inches by 2 inches by 1 inch. Prism B is 1 inch by 1 inch by 6 inches.

Select **all** statements that are true about the two prisms.

- A. They have the same volume.
- B. They have the same number of faces.
- C. More inch cubes can be packed into Prism A than into Prism B.
- D. The two prisms have the same surface area.
- E. The surface area of Prism B is greater than that of Prism A.

(from Unit 1, Lesson 16)

6. a. What polyhedron can be assembled from this net?



b. What information would you need to find its surface area? Be specific, and label the diagram as needed.

(from Unit 1, Lesson 14)

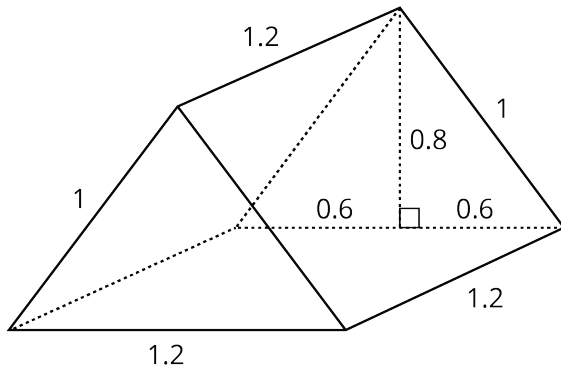
7. Find the surface area of this triangular prism. All measurements are in meters.



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(from Unit 1, Lesson 15)

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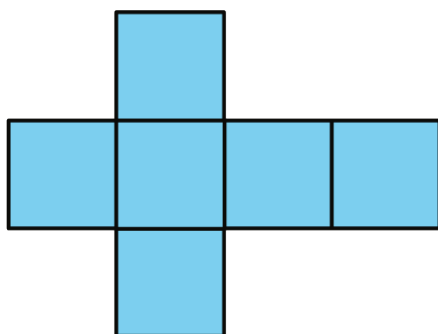
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## Unit 1, Lesson 18: Surface Area of a Cube

1. a. What is the volume of a cube with edge length 8 in?
- b. What is the volume of a cube with edge length  $\frac{1}{3}$  cm?
- c. A cube has a volume of  $8 \text{ ft}^3$ . What is its edge length?

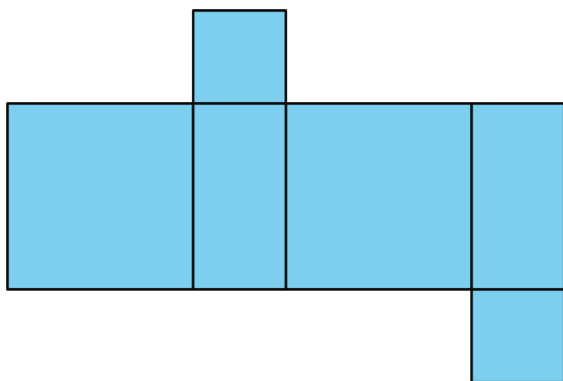
2. a. What three-dimensional figure can be assembled from this net?



- b. If each square has a side length of 61 cm, write an expression for the surface area and another for the volume of the figure.

3. a. Draw a net for a cube with edge length  $x$  cm.
- b. What is the surface area of this cube?
- c. What is the volume of this cube?

4. Here is a net for a rectangular prism that was not drawn accurately.



- a. Explain what is wrong with the net.
- b. Draw a net that can be assembled into a rectangular prism.
- c. Create another net for the same prism.

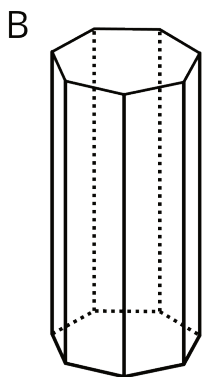
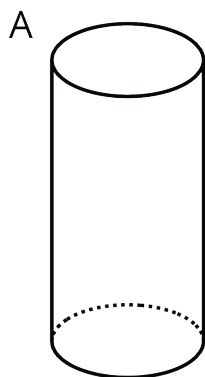
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(from Unit 1, Lesson 14)

5. State whether each figure is a polyhedron. Explain how you know.



(from Unit 1, Lesson 13)

6. Here is Elena's work for finding the surface area of a rectangular prism that is 1 foot by 1 foot by 2 feet.

top & bottom:  
 $2 \cdot (12 \cdot 12)$   
 $= 2 \cdot 144$   
 $= 288$

four side faces:  
 $4 \cdot (2 \cdot 1)$   
 $= 8$

She concluded that the surface area of the prism is 296 square feet. Do you agree with her conclusion? Explain your reasoning.

(from Unit 1, Lesson 12)

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# Unit 1, Lesson 19: Designing a Tent

Let's design some tents.

## 19.1: Tent Design - Part 1

Have you ever been camping?

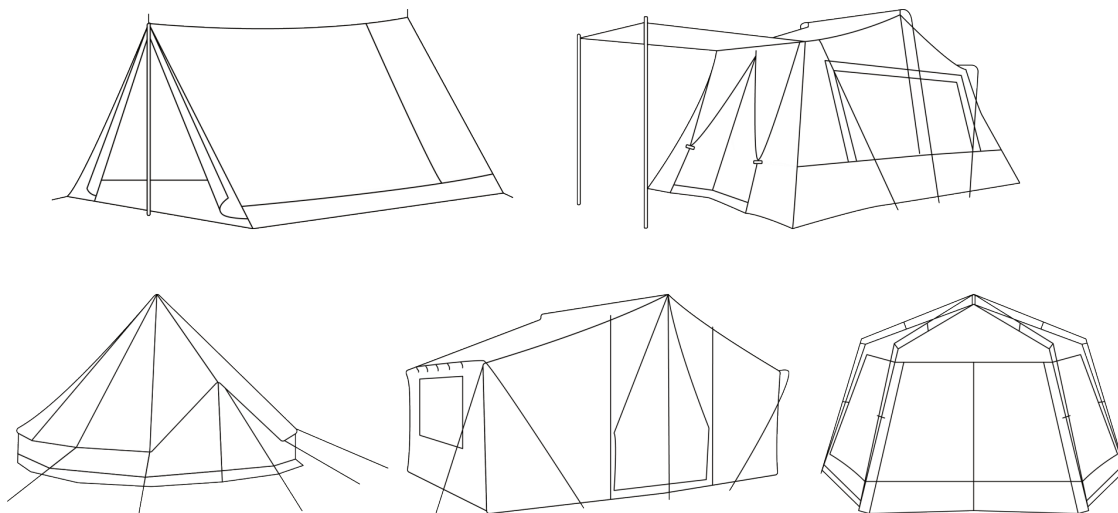
You might know that sleeping bags are all about the same size, but tents come in a variety of shapes and sizes.

Your task is to design a tent to accommodate up to four people, and estimate the amount of fabric needed to make your tent. Your design and estimate must be based on the information given and have mathematical justification.

First, look at these examples of tents, the average specifications of a camping tent, and standard sleeping bag measurements. Talk to a partner about:

- Similarities and differences among the tents
- Information that will be important in your designing process
- The pros and cons of the various designs

### Tent Styles



NAME \_\_\_\_\_

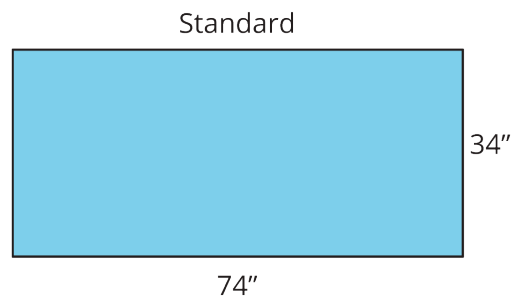
DATE \_\_\_\_\_

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Tent Height Specifications

height description	height of tent	notes
sitting height	3 feet	Campers are able to sit, lie, or crawl inside tent.
kneeling height	4 feet	Campers are able to kneel inside tent. Found mainly in 3-4 person tents.
stooping height	5 feet	Campers are able to move around on their feet inside tent, but most campers will not be able to stand upright.
standing height	6 feet	Most adult campers are able to stand upright inside tent.
roaming height	7 feet	Adult campers are able to stand upright and walk around inside tent.

Sleeping Bag Measurements



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1. Create and sketch your tent design. The tent must include a floor.

2. What decisions were important when choosing your tent design?

3. How much fabric do you estimate will be necessary to make your tent? Show your reasoning and provide mathematical justification.

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**19.2: Tent Design - Part 2**

1. Explain your tent design and fabric estimate to your partner or partners. Be sure to explain why you chose this design and how you found your fabric estimate.
2. Compare the estimated fabric necessary for each tent in your group. Discuss the following questions:
  - Which tent design used the least fabric? Why?
  - Which tent design used the most fabric? Why?
  - Which change in design most impacted the amount of fabric needed for the tent? Why?