

Module 16a: Volumes of Prisms

Math Practice(s):

- Model with mathematics.
- Look for & make use of structure.

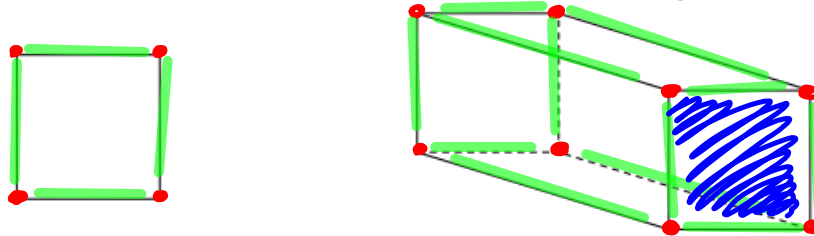
Learning Target(s):

- Explain why the volume of a prism is $V=Bh$ (B = area of base).

Homework:

HW#8: 16a #1-4

Warm up: Let's take a look at two-dimensional and three-dimensional objects below.



(erase to show)

A **vertex** (plural: **vertices**) (#VOC) in a 2 or 3-dimensional object is a point where two or more straight lines intersect. *{Mark with a dot the vertices in the two figures above}*

*A square has 4 vertices. A square prism (at right above) has 8 vertices.

An **edge** (#VOC) in a 2 or 3-dimensional object is a line segment that joins two vertices. *{Mark with a highlighter the edges of the two figures above}*

*A square has 4 edges. A square prism has 12 edges.

A **face** (#VOC) of a 3-dimensional object is one of the 2-dimensional (flat) objects that form the boundary (surface) of the 3-dimensional (solid) object. *{Shade one face of the square prism above}*

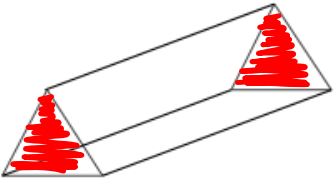
*A rectangular prism has 6 faces. Why does the square above NOT have any faces
The square is a flat surface already.

(erase to show)

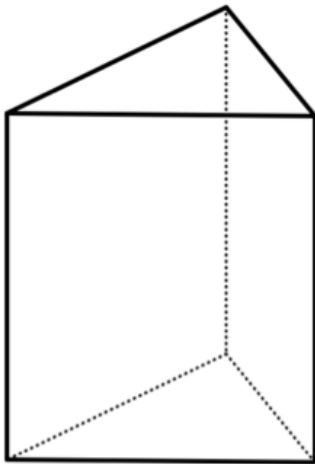
Prism (#VOC)

A polyhedron with two \cong , \parallel polygonal bases and parallelogram faces.

Named by the shape of the bases, i.e. triangular prism.

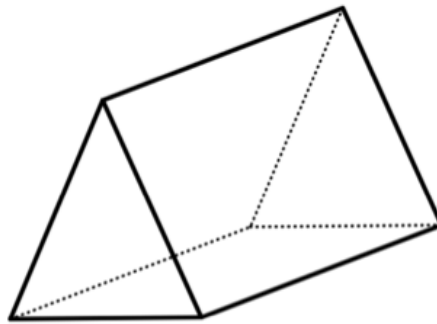


1. HW



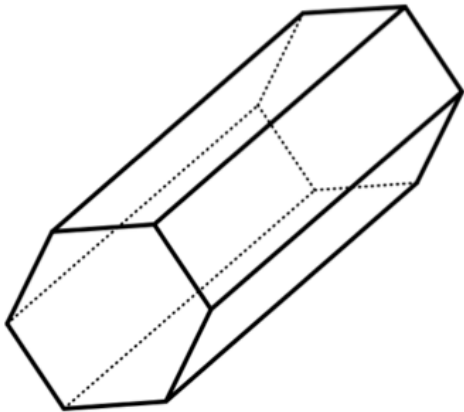
- A. Is the 3-dimensional figure shown above a prism? Explain why or why not.
- B. Shade all bases of the figure and state the shape of each base.
- C. What would be an appropriate geometric name for this figure?
- D. How many vertices does this figure have?
- E. How many edges does this figure have?
- F. State the shape of each face and determine the number of faces that this figure has.

2.



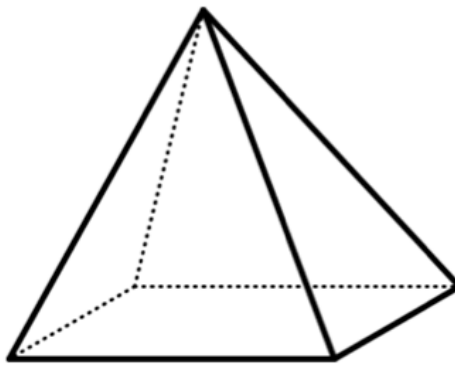
- A. Is the 3-dimensional figure shown above a prism? Explain why or why not.
- B. Shade all bases of the figure and state the shape of each base.
- C. What would be an appropriate geometric name for this figure?
- D. How many vertices does this figure have?
- E. How many edges does this figure have?
- F. State the shape of each face and determine the number of faces that this figure has.

3. HW



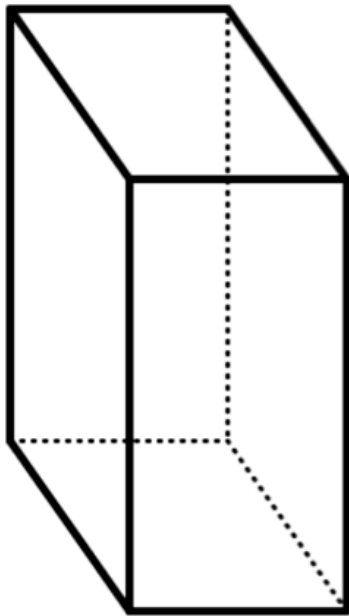
- A. Is the 3-dimensional figure shown above a prism? Explain why or why not.
- B. Shade all bases of the figure and state the shape of each base.
- C. What would be an appropriate geometric name for this figure?
- D. How many vertices does this figure have?
- E. How many edges does this figure have?
- F. State the shape of each face and determine the number of faces that this figure has.

4.



- A. Is the 3-dimensional figure shown above a prism? Explain why or why not.
- B. Shade all bases of the figure and state the shape of each base.
- C. What would be an appropriate geometric name for this figure?
- D. How many vertices does this figure have?
- E. How many edges does this figure have?
- F. State the shape of each face and determine the number of faces that this figure has.

5. HW



- A. Is the 3-dimensional figure shown to the left a prism? Explain why or why not.
 - B. Identify a pair of bases of the prism, shade them and state their shape.
 - C. What would be an appropriate geometric name for this figure?
 - D. How many vertices does this figure have?
 - E. How many edges does this figure have?
 - F. State the shape of each face and determine the number of faces that this figure has.
6. Sketch a triangular prism, a rectangular prism and a pentagonal prism.