



TABE Math-E

PAXEN

Unit-6 Geometry

Lesson 44

3 Dimensional Shapes

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Some graphics may not have copied well during the scan process.

Math-E - Lesson 44 – 3-Dimensional

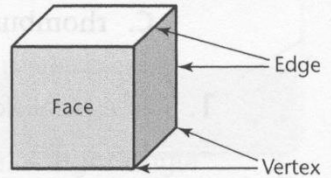
Lesson 44

3-Dimensional Shapes

2.G.1 – Medium

Three-dimensional shapes have length, width, and height. Prisms and pyramids are two types of three-dimensional shapes. Prisms and pyramids can be characterized by three features:

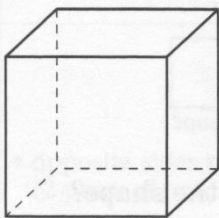
- **Face**—a flat surface
- **Edge**—a line where two faces meet
- **Vertex**—a point where three or more edges meet (plural: vertices)



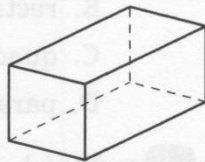
Prisms and pyramids are named by the shape of their bases.

Prisms have two parallel and congruent faces. (Congruent faces have the same size and shape.) These are the bases of the prism. If the bases are rectangles or squares, then the prism is a rectangular prism. A cube, or square prism, is a special rectangular prism whose faces are all squares. If the bases are triangles, then the prism is a triangular prism, and so on.

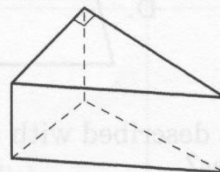
Pyramids have one base opposite an apex, or highest point. If the base is a square, then the pyramid is a square pyramid. If the base is a triangle, then the pyramid is a triangular pyramid, and so on.



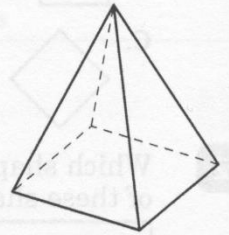
Cube



Rectangular Prism



Right-Triangular Prism



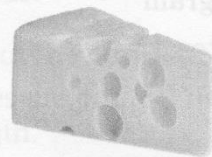
Square Pyramid

Features of Prisms and Pyramids

Shape	Faces	Edges	Vertices	Shapes of Faces
Cube	6	12	8	6 squares
Rectangular Prism	6	12	8	6 rectangles (0, 2, or 6 squares)
Triangular Prism	5	9	6	2 triangles, 3 squares or rectangles
Square Pyramid	5	8	5	1 square, 4 triangles

Example What is the name of the shape shown?

- 1) Identify the flat surfaces of the shape.
The flat surfaces are rectangles and triangles.
- 2) Count the faces, edges, and vertices.
There are 5 faces, 9 edges, and 6 vertices.



The shape is a triangular prism.

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Test Example

1. Which shape has 4 triangular faces?

- A. cube
- B. square pyramid
- C. rectangular prism
- D. triangular prism

1. B Only a square pyramid has 4 triangular faces.

Practice

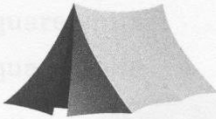
Read each question. Select the correct answer.

1 What is the name of the shape shown?



- A. cube
- B. rectangular prism
- C. triangular prism
- D. square pyramid

2 What is the name of the shape shown?



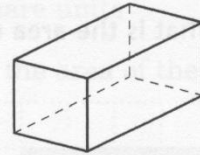
- A. cube
- B. rectangular prism
- C. triangular prism
- D. square pyramid

3 What is the name of the shape shown?



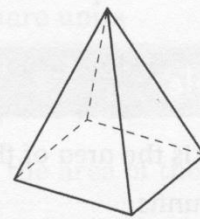
- A. cube
- B. rectangular prism
- C. triangular prism
- D. square pyramid

4 How many faces, edges, and vertices does the rectangular prism have?



- A. 6 faces, 12 edges, 8 vertices
- B. 6 faces, 10 edges, 6 vertices
- C. 5 faces, 9 edges, 5 vertices
- D. 5 faces, 8 edges, 5 vertices

5 How many faces, edges, and vertices does the square pyramid have?



- A. 6 faces, 10 edges, 6 vertices
- B. 6 faces, 12 edges, 8 vertices
- C. 5 faces, 8 edges, 5 vertices
- D. 5 faces, 9 edges, 5 vertices

6 Which two shapes have 6 faces, 12 edges, and 8 vertices?

- A. cube and rectangular prism
- B. rectangular prism and triangular prism
- C. rectangular prism and square pyramid
- D. square pyramid and triangular prism

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Lesson 44

3-Dimensional Shapes

(2.G.1)

- 1. B.** The tissue box is in the shape of a rectangular prism. The faces are rectangles.
- 2. C.** The tent has the shape of a triangular prism. The two parallel bases are triangles.
- 3. D.** The pyramid is a square pyramid. The faces are triangles, and the base is a square.
- 4. A.** A rectangular prism has 6 faces, 12 edges, 8 vertices.
- 5. C.** A square pyramid has 5 faces, 8 edges, 5 vertices.
- 6. A.** A cube is an example of a rectangular prism, so they both have 6 faces, 12 edges, 8 vertices.

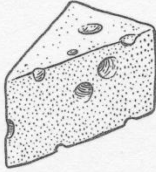
Math-E - Practice 44 – 3-Dimensional

Practice 44

3-Dimensional Shapes

2.G.1 – Medium

- 1 What shape is represented by this chunk of cheese?



- A. rectangular prism
- B. square pyramid
- C. triangular prism
- D. cube

- 2 Which object is a cube?



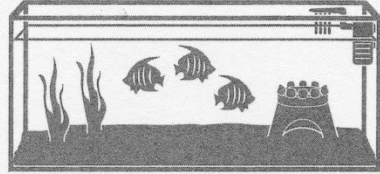
- 3 How many square faces does a square pyramid have?

- A. 0 square faces
- B. 1 square face
- C. 2 square faces
- D. 3 square faces

- 4 Which shape has five faces, eight edges, and five vertices?

- A. rectangular prism
- B. square pyramid
- C. triangular prism
- D. cube

- 5 Bright Smile Dentistry has a fish tank in the waiting room.



What is the name of this shape?

- A. rectangular prism
- B. triangular prism
- C. square pyramid
- D. cube

- 6 Which shape has two triangular faces?

- A. cube
- B. square pyramid
- C. rectangular prism
- D. triangular prism

Use the information to answer question 7.

Santana's office is in a skyscraper building. The building's shape is a rectangular prism.

- 7 **Part A**

How many edges does Santana's office building have?

- A. 6 edges
- B. 8 edges
- C. 12 edges
- D. 14 edges

Part B

How many vertices does Santana's office building have?

- A. 8 vertices
- B. 9 vertices
- C. 10 vertices
- D. 12 vertices

- 8 The roof on Sachio's tool shed has the shape of a triangular prism. How many edges does the roof have?

- A. 5 edges
- B. 6 edges
- C. 8 edges
- D. 9 edges

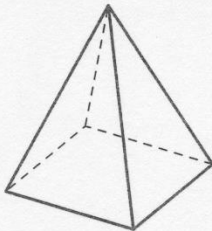
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- 9 Hannah receives a present for her birthday.



What are the two possible names of this shape?

- A. cube
 - B. sphere
 - C. square pyramid
 - D. triangular prism
 - E. rectangular prism
 - F. triangular pyramid
- 10 The Louvre Museum in Paris, France has a structure at the entrance that looks like the shape below.

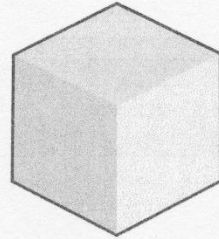


How many triangular faces does this shape have?

- A. 1 triangular face
 - B. 2 triangular faces
 - C. 3 triangular faces
 - D. 4 triangular faces
- 11 Lorenzo solves every face of a cube-shaped puzzle. How many faces does Lorenzo solve?
- A. 3 faces
 - B. 4 faces
 - C. 5 faces
 - D. 6 faces

Use the information to answer question 12.

Bernardo orders coffee and asks the barista to leave room for cream and sugar. After pouring some cream, Bernardo places one sugar cube in his coffee.



- 12 **Part A**
- How many edges does one sugar cube have?
- A. 8 edges
 - B. 9 edges
 - C. 12 edges
 - D. 13 edges

- Part B**
- How many vertices does one sugar cube have?
- A. 9 vertices
 - B. 8 vertices
 - C. 6 vertices
 - D. 5 vertices

- 13 A cereal box has the shape of a rectangular prism. How many faces does a cereal box have?
- A. 3 faces
 - B. 4 faces
 - C. 5 faces
 - D. 6 faces

- 14 Cami cuts a slice of watermelon. The shape of the slice is a triangular prism. How many vertices does the watermelon slice have?
- A. 12 vertices
 - B. 9 vertices
 - C. 6 vertices
 - D. 5 vertices

Practice 44

3-Dimensional Shapes

pp. 30–31

(2.G.1)

1. C. The chunk of cheese is in the shape of a triangular prism. The two parallel bases are triangles.
2. B. The die is a cube. It has 6 square faces.
3. B. The base of a square pyramid is square. The other faces are triangles.
4. B. A square pyramid has 5 faces, 8 edges, and 5 vertices.
5. A. The fish tank is a rectangular prism. A rectangular prism has 6 sides, 12 edges, and 8 vertices.
6. D. A triangular prism has 2 triangular faces. The other faces are rectangles.
7. Part A: C. A rectangular prism has 12 edges.
Part B: A. A rectangular prism has 8 vertices.
8. D. A triangular prism has 9 edges.
9. A, E. The present could be either a cube or a rectangular prism. A cube and a rectangular prism both have 6 rectangular faces.
10. D. The structure is in the shape of a square pyramid. A square pyramid has 4 triangular faces.
11. D. A cube has 6 faces.
12. Part A: C. A cube has 12 edges.
Part B: B. A cube has 8 vertices.
13. D. A rectangular prism has 6 faces.
14. C. A triangular prism has 6 vertices.