

CHAPTER 7

Surface Area and Volume

What You've Learned

- In Chapter 1, you multiplied rational numbers.
- In Chapter 6, you found the areas of parallelograms, triangles, and other figures.
- You found the circumference and area of a circle.

Open up evernote and start your notes. Label them as Three Dimensional Figures.

Get ready to do 10 warm-up problems in 10 minutes. You can use prior notes, your table mates, scratch paper, and calculators. Write your answers in your Evernote notes.



Check Your Readiness

Multiplying Rational Numbers

Find each product.

1. $0.25 \cdot 3.14 \cdot 4$

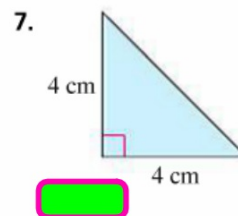
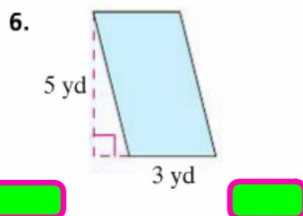
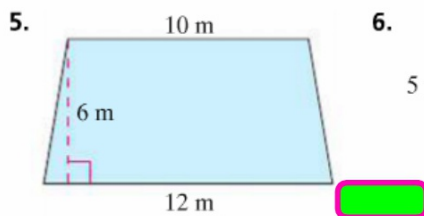
2. $2 \cdot 20.5 \cdot 2$

3. $\frac{1}{2} \cdot 5 \cdot 8$

4. $2.8 \cdot (-4.3)$

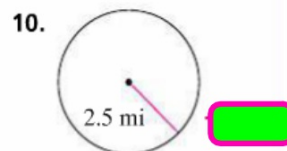
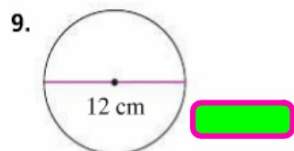
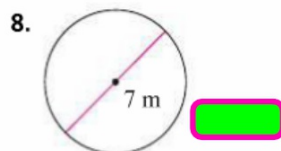
Areas of Parallelograms, Triangles, Circles, and Other Figures

Find the area of each figure. Round to the nearest tenth.



Circumference of a Circle

Find the circumference of each circle. Round to the nearest tenth.



7-1

Three-Dimensional Figures

© CONTENT STANDARDS

Essential for understanding
7.G.3

What You'll Learn

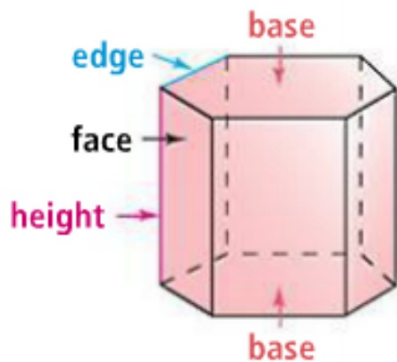
To classify and draw three-dimensional figures

New Vocabulary three-dimensional figure, face, edge, bases, prism, height, cube, cylinder, pyramid, vertex, cone, sphere, center

Why Learn This?

You already know about some three-dimensional figures. You see them in many ordinary objects around you. If you know how to classify three-dimensional figures, you can describe the shapes of the objects you see.

A **three-dimensional figure**, or solid, is a figure that does not lie in a plane. A flat surface of a solid shape like a polygon is called a **face**. Each segment formed by the intersection of two faces is an **edge**.



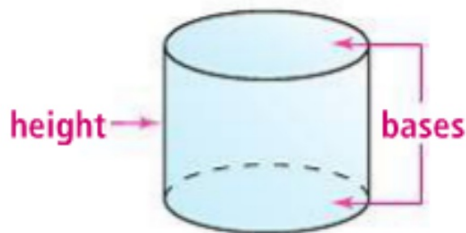
A **prism** is a three-dimensional figure with two parallel and congruent polygonal faces, called **bases**. The other faces are rectangles. The **height** of a prism is the length of a perpendicular segment that joins the bases.

A prism is named for the shape of its bases.

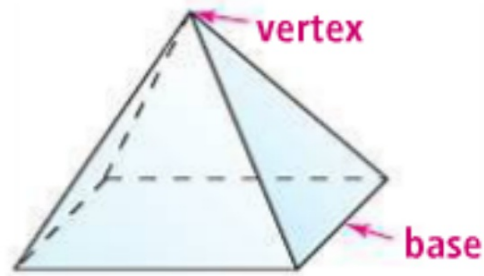


A **cube** is a rectangular prism with faces that are all squares.

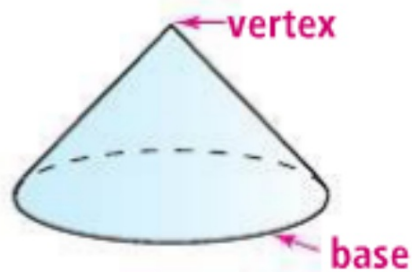
A **cylinder** has two congruent parallel bases that are circles. The height of a cylinder is the length of a perpendicular segment that joins the bases.



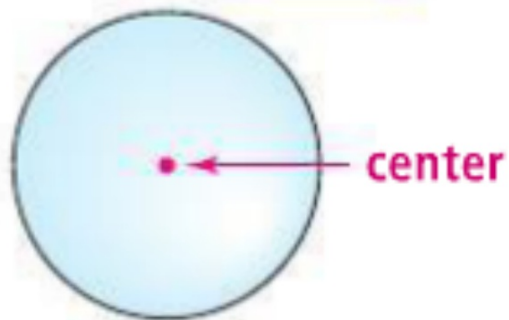
A **pyramid** has triangular faces that meet at one point, a **vertex**, and a base that is a polygon. A pyramid is named for the shape of its base.



A **cone** has one circular base and one vertex.



A **sphere** is the set of all points in space that are the same distance from a **center** point.



EXAMPLE Naming Figures

1 **Architecture** Look at the architectural blocks. Name Figure 3.



Figure 3 has two parallel, congruent bases that are circles.

Figure 3 is a cylinder.

Quick Check

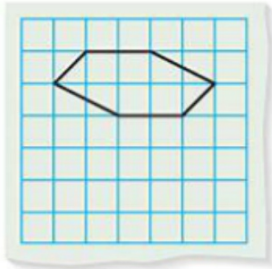
1. Name Figures 1 and 2. ;

You can use graph paper to draw three-dimensional figures.

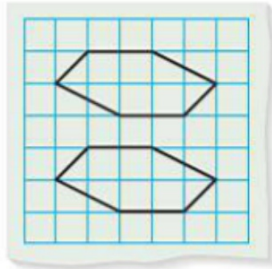
EXAMPLE Drawing Three-Dimensional Figures

2 Draw a hexagonal prism.

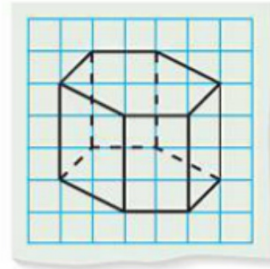
Step 1 Draw a hexagon.



Step 2 Draw a second hexagon congruent to the first.



Step 3 Connect the vertices. Use dashed lines for hidden edges.



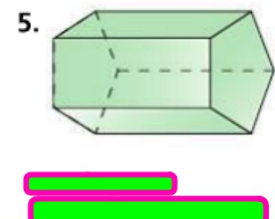
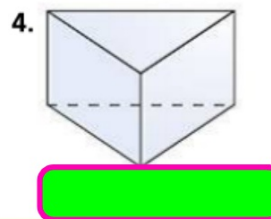
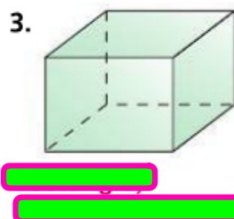
I will pass out some graph paper so we can practice this now.



Check Your Understanding

- Vocabulary** A ? has one circular base and one vertex.
- Which three-dimensional figure does NOT have a base?
 A cone B prism C pyramid D sphere

Describe each base and name each prism.



No assignment today :)