

Dear Family,

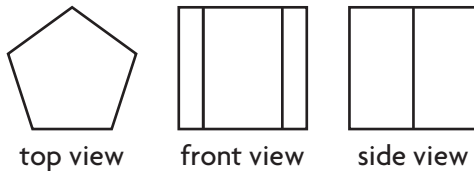
During the next few weeks, our math class will be learning about relating two-dimensional and three-dimensional shapes. We will also learn how to identify and draw nets of three-dimensional shapes.

You can expect to see homework that provides practice with identifying and drawing the faces and bases of different three-dimensional shapes.

Here is a sample of how your child will be taught to identify a three-dimensional shape using different views of it.

MODEL Identify Three-Dimensional Shapes from Different Views.

This is how we will be identifying a three-dimensional shape using different views.



The top view of the shape shows that the base is a pentagon. Since the view does not show that the faces come together at a point, the shape has two pentagonal bases.

The front and side views show that the three-dimensional shape looks like a rectangle.

A shape that has rectangular faces and two bases is a prism. So, the shape is a pentagonal prism.

Vocabulary

dimension A measure in one direction

face A polygon that is a flat surface of a three-dimensional shape

pyramid A three-dimensional shape with a polygon base and triangular sides that meet at a single point

prism A three-dimensional shape with two congruent and parallel faces that can be any polygon and whose other faces are rectangles

net A two-dimensional pattern that can be folded to make a three-dimensional shape

Tips

Remind students that when working with three-dimensional objects, they cannot always identify a shape from only one, two, or three views. This is important to remember when they have to draw or describe irregular three-dimensional objects built from cubes.

Carta para la casa

Querida familia,

Durante los próximas semanas, en la clase de matemáticas aprenderemos a relacionar figuras bidimensionales y tridimensionales. También aprenderemos a identificar y trazar plantillas de figuras tridimensionales.

Llevaré a la casa tareas para practicar cómo identificar y trazar las caras y las bases de diferentes figuras tridimensionales.

Este es un ejemplo de la manera como aprenderemos a identificar una figura dimensional desde diferentes vistas.

Vocabulario

dimensión Una medida en una dirección

cara Una superficie plana de una figura tridimensional que es a su vez un polígono

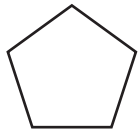
pirámide Una figura tridimensional con una base poligonal y caras triangulares que se unen en un mismo punto

prisma Una figura tridimensional con dos caras congruentes y paralelas que pueden ser cualquier polígono y cuyas caras restantes son rectángulos

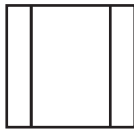
plantilla Un patrón bidimensional que se puede doblar para hacer una figura tridimensional

MODELO Identificar figuras tridimensionales desde diferentes vistas.

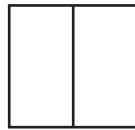
Así es como identificaremos una figura tridimensional desde diferentes vistas.



vista superior



vista frontal



vista lateral

La vista superior muestra que la base es un pentágono. Dado que la vista no muestra que las caras se unen en un punto, la figura tiene dos bases pentagonales.

Las vistas frontal y lateral muestran que la figura tridimensional se ve como un rectángulo.

Un figura que tiene caras rectangulares y dos bases es un prisma. Por lo tanto, la figura es un prisma pentagonal.

Pistas

Cuando se trabaja con objetos tridimensionales, no siempre se puede identificar una figura desde una, dos o tres vistas. Es importante recordar esto cuando haya que trazar o describir objetos irregulares tridimensionales formados con cubos.

Name _____

Identify Geometric Shapes



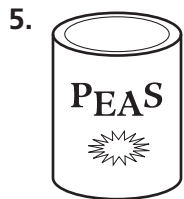
MA.4.G.5.3 Identify and build a three-dimensional object from a two-dimensional representation of that object and vice versa.

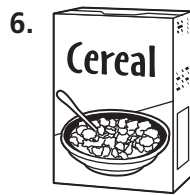
Identify a three-dimensional shape that is described.

1. 2 triangular bases 2. 1 circular base 3. 6 faces 4. 1 square base

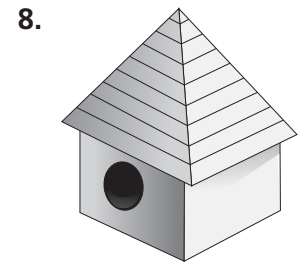
triangular
prism

Identify the three-dimensional shape or shapes you see that describe the objects.

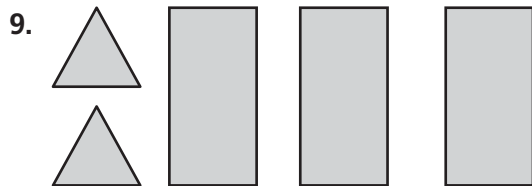


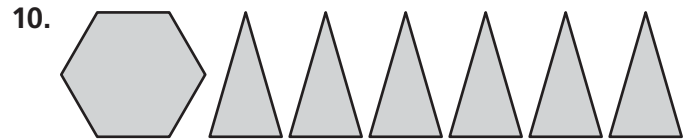




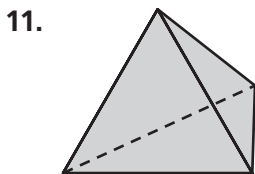


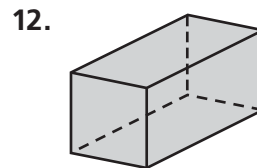
Identify the three-dimensional shape that has the faces shown.





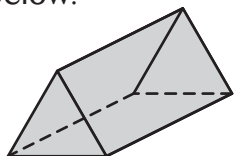
Identify the three-dimensional shape. Draw the faces.





Lesson Check (MA.4.G.5.3)

1. Identify the three-dimensional shape shown below.



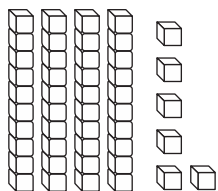
- (A) triangular pyramid
- (B) square pyramid
- (C) triangular prism
- (D) rectangular prism

2. How many faces does a square pyramid have?

- (F) 4
- (G) 5
- (H) 6
- (I) 12

Review Grade 4 (MA.4.A.2.2)

3. What is the decimal amount that is represented by the model below? One flat equals 1.



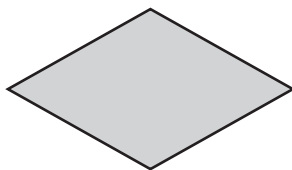
- (A) 4.6
- (B) 0.46
- (C) 0.046
- (D) 0.0046

4. Serena models the decimal 5.83 using base-ten blocks. If she uses a flat to represent 1 unit, which of the following describes a way Serena could model the decimal?

- (F) 5 longs 3 small cubes
- (G) 58 longs 3 small cubes
- (H) 5 flats 83 longs
- (I) 58 flats 35 small cubes

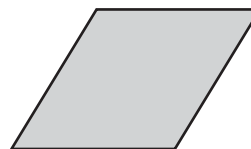
Look Back (MA.3.G.3.2, MA.4.G.5.2)

5. Which pattern blocks can be combined to make the shape?



- (A) 1 rectangle; 1 triangle
- (B) 1 rhombus; 1 rectangle
- (C) 2 triangles
- (D) 2 rhombuses

6. Name a new shape that can be made by combining two of the pattern block shapes shown.



- (F) parallelogram
- (G) rhombus
- (H) square
- (I) octagon



Name _____

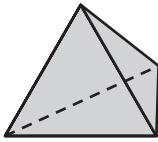
Build Three-Dimensional Shapes



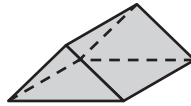
MA.4.G.5.3 Identify and build a three-dimensional object from a two-dimensional representation of that object and vice versa.

Draw a line to match the three-dimensional shape with the net.

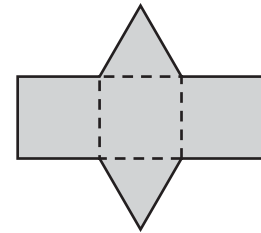
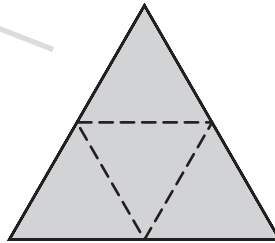
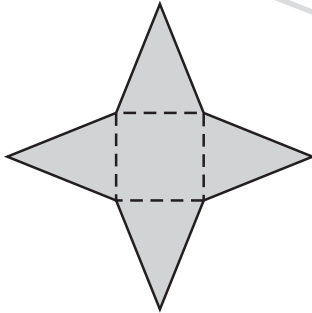
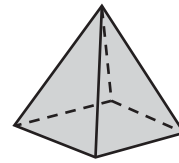
1.



2.

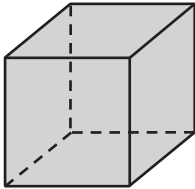


3.

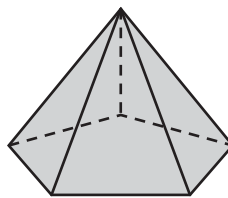


On grid paper, draw a net that can be cut to make a model of the three-dimensional shape.

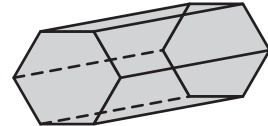
4.



5.



6.

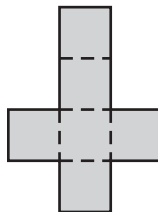


Could the net be folded to make a cube? Write *yes* or *no*.

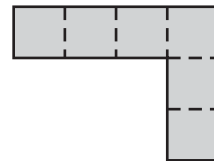
7.



8.

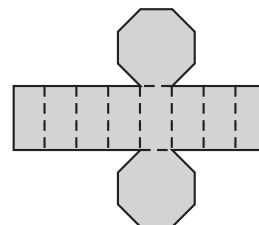


9.



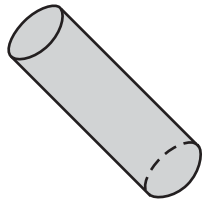
Problem Solving **REAL WORLD**

10. Camilla is creating a paper lantern for her garden party. She cuts the net at the right out of tissue paper to fold over a wooden frame. What three-dimensional shape is the lantern?



Lesson Check (MA.4.G.5.3)

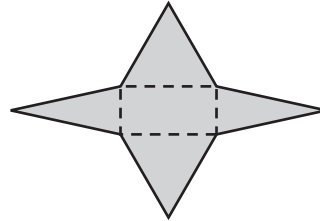
1. Dante has this container for posters.



What two-dimensional shapes make up the container's pattern?

- (A) rectangles
- (B) circles
- (C) circles and triangle
- (D) circles and rectangle

2. Identify the three-dimensional shape that can be made from the net below.



- (F) triangular pyramid
- (G) triangular prism
- (H) rectangular pyramid
- (I) rectangular prism

Review Grade 4 (MA.4.A.6.3)

3. Which of the following is a set of equivalent fractions?

- (A) $\frac{5}{6}$, $\frac{6}{8}$, $\frac{8}{12}$
- (B) $\frac{3}{5}$, $\frac{6}{10}$, $\frac{9}{15}$
- (C) $\frac{1}{4}$, $\frac{4}{12}$, $\frac{6}{24}$
- (D) $\frac{10}{20}$, $\frac{7}{14}$, $\frac{3}{8}$

4. Which fraction is NOT in simplest form?

- (F) $\frac{30}{54}$
- (G) $\frac{5}{9}$
- (H) $\frac{3}{5}$
- (I) $\frac{8}{9}$



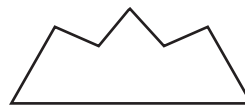
Look Back (MA.3.G.3.1)

5. Which shape is a polygon?

- (A)
- (B)
- (C)
- (D)

6. How many sides does this shape have?

- (F) 8
- (G) 7
- (H) 6
- (I) 5



Name _____

Different Views Of Three-Dimensional Shapes



MA.4.G.5.3 Identify and build a three-dimensional object from a two-dimensional representation of that object and vice versa.

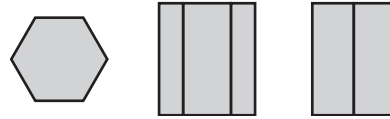
Name the three-dimensional shape that has these views.

1. top view front view side view

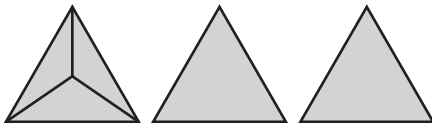


cone

2. top view front view side view



3. top view front view side view



4. top view front view side view

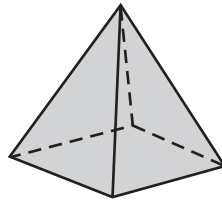


On a separate sheet of paper, draw and label the top, front, and side views of the three-dimensional shape.

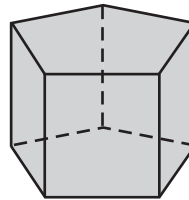
5.



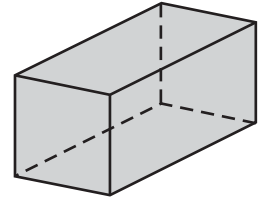
6.



7.



8.



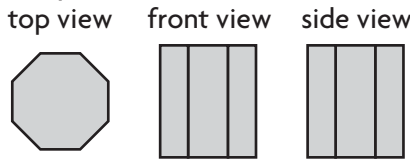
Problem Solving **REAL WORLD**

9. Donald looks at an object from the side and sees a rectangle. Claudia looks at the same object from the front and also sees a rectangle. Kailey looks at the object from the top and sees a triangle. Which three-dimensional shape do they observe?

10. Clay and Chandler look at an object from the side and see a rectangle. Could the object be a rectangular prism? Explain.

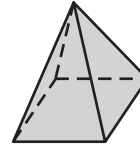
Lesson Check (MA.4.G.5.3)

1. Which of the following three-dimensional shapes matches the views below?



- (A) rectangular pyramid
- (B) octagonal pyramid
- (C) rectangular prism
- (D) octagonal prism

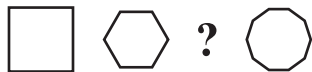
2. Which of the following could be the front view of the three-dimensional object below?



- (F)
- (G)
- (H)
- (I)

Review Grade 4 (MA.4.A.4.1)

3. Which could be the missing shape in the geometric pattern below?



- (A) circle
- (B) pentagon
- (C) hexagon
- (D) octagon

4. If the pattern continues, what might be the next shape in the pattern below?

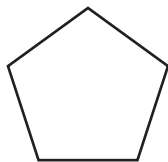


- (F)
- (G)
- (H)
- (I)



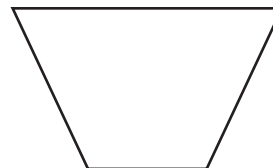
Look Back (MA.3.G.3.1)

5. What is the name of the polygon shown? How many sides does it have?



- (A) hexagon; 5
- (B) pentagon; 6
- (C) pentagon; 5
- (D) hexagon; 6

6. How many vertices does this shape have?



- (F) 6
- (G) 4
- (H) 2
- (I) 0



Name _____

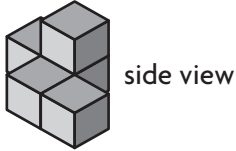
Build and Draw Different Views Of Three-Dimensional Shapes



MA.4.G.5.3 Identify and build a three-dimensional object from a two-dimensional representation of that object and vice versa.

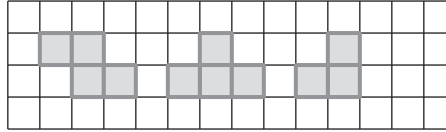
Use cubes to build the three-dimensional shape. Then draw the top, front, and side views.

1. top view

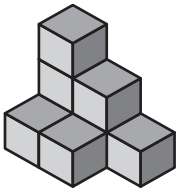


front view

top view front view side view

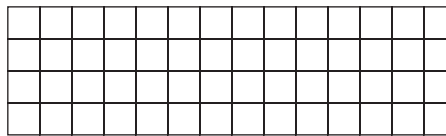


2.

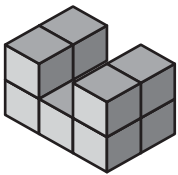


front view

top view front view side view

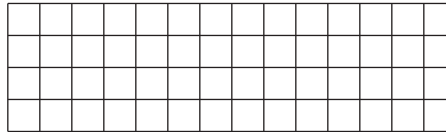


3.



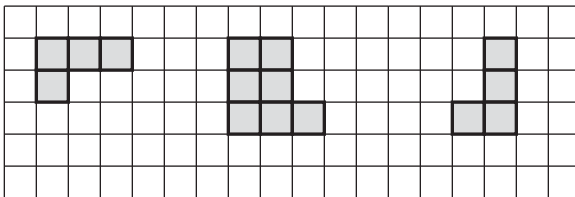
front view

top view front view side view

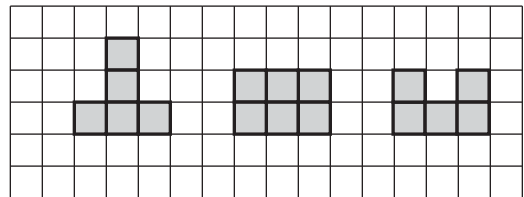


Build a three-dimensional shape from the given views.

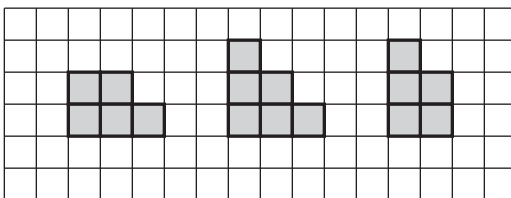
4. top view front view side view



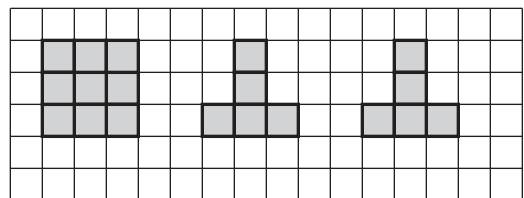
5. top view front view side view



6. top view front view side view

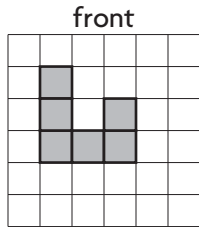


7. top view front view side view

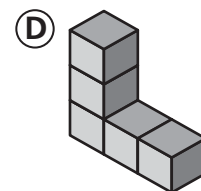
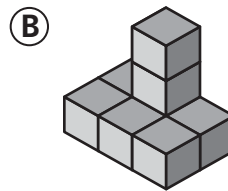
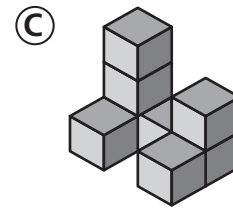
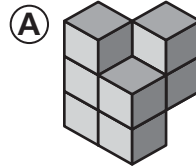


Lesson Check (MA.4.G.5.3)

1. Angelo draws the front view of a three-dimensional shape he built from blocks on grid paper.

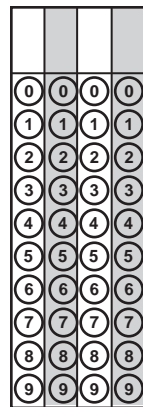


Which of the following could be Angelo's shape?



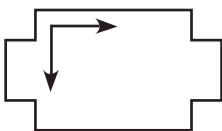
Review Grade 4 (MA.4.A.6.4)

2. What is the least common multiple of 6 and 9?



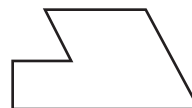
Look Back (MA.3.G.3.1, MA.4.G.5.1)

3. What kind of angle is the angle marked in this shape?



- (F) obtuse (H) vertex
(G) acute (I) right

4. How many of obtuse angles does the polygon have?



- (A) 6 (C) 2
(B) 4 (D) 1



Name _____

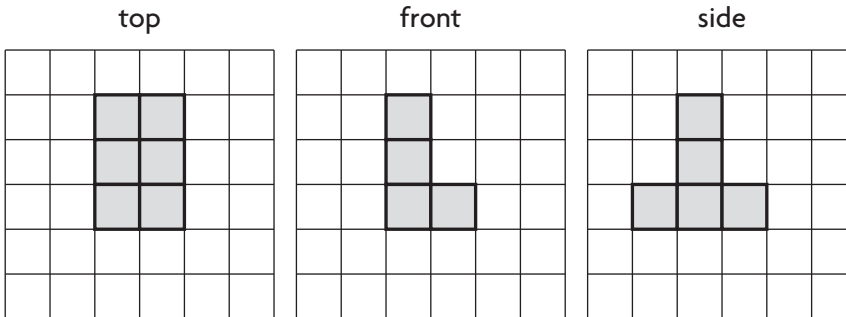
**Use Manipulatives • Build Shapes
From Representations**



MA.4.G.5.3 Identify and build a three-dimensional object from a two-dimensional representation of that object and vice versa.

Use manipulatives to solve the problems.

1. Sofia builds a model with blocks and draws the top, front, and side views of her shape on the grid paper.



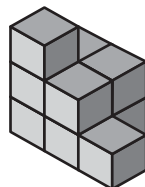
Think: First, build the top view of Sofia’s model. The model has 6 cubes. Next, stack more cubes to match the front view. Then decide whether the model matches the side view. Make changes, if necessary.

Ana has 10 blocks. She wants to rebuild Sofia’s model using the views above. Does Ana have enough blocks to rebuild Sofia’s model? Explain.

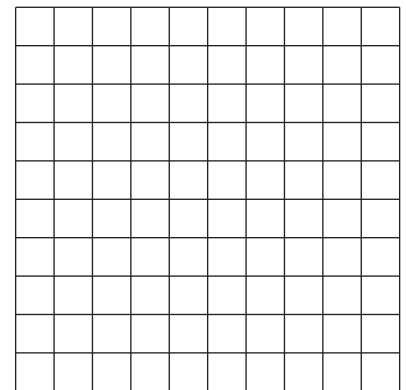
Yes; Ana needs only 8 blocks to make Sofia’s model.

2. Kai has 50 blocks. He wants to build a pyramid that has 10 blocks in the bottom row, 9 blocks in the row on top of that, 8 blocks in the row on top of that, and so on. Does Kai have enough blocks to complete the pyramid so that there is 1 block in the top row? Explain.

3. April uses 10 blocks to make the model below.

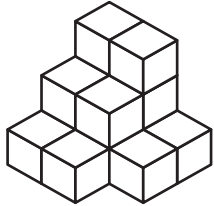


Draw and label a top view, a front view, and a side view of April’s shape on grid paper.



Lesson Check (MA.4.G.5.3)

1. How many blocks must be added to the model below to make a cube with a total of 27 blocks? There are no hidden cubes.



- (A) 8
- (B) 13
- (C) 18
- (D) 21

2. Hao had 80 blocks. He gave 20 blocks to Jimmy. Then he gave half of the rest of the blocks to Skyler. Finally, Jin gave him 5 more blocks. How many blocks did Hao end up with?

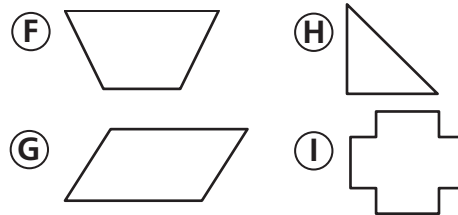
- (F) 35
- (G) 40
- (H) 45
- (I) 55

Review Grade 4 (MA.4.G.5.2)

3. Which letter does NOT have rotational symmetry?

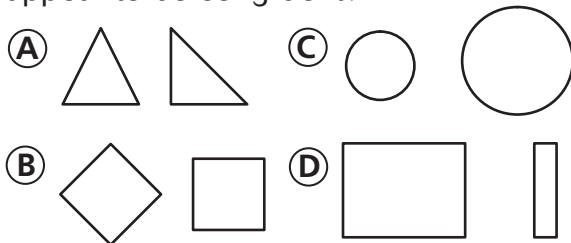
- (A) A
- (B) H
- (C) N
- (D) Z

4. Which shape appears to have more than 1 line of symmetry?

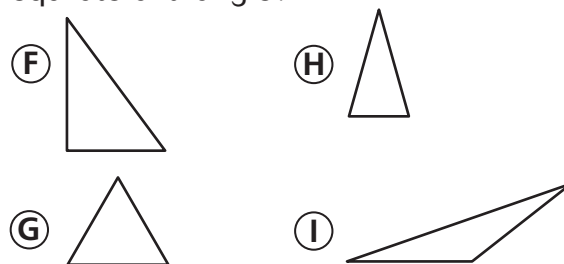


Look Back (MA.3.G.3.3, MA.4.G.5.2)

5. Which of the following pairs of shapes appear to be congruent?



6. Which of the following is an equilateral triangle?



Name _____

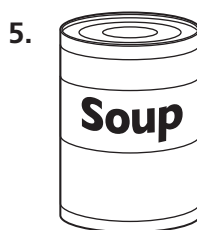
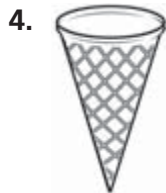
Chapter 13 Extra Practice

Lesson 13.1 (pp. 529–532)

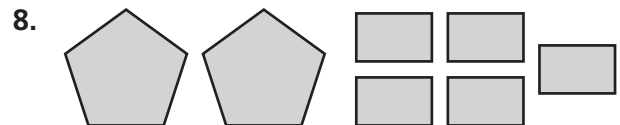
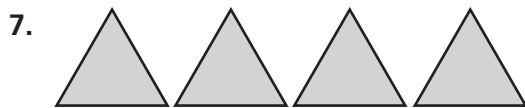
Identify a three-dimensional shape that is described.

1. 6 triangular faces 2. 2 pentagonal bases 3. 4 triangular faces

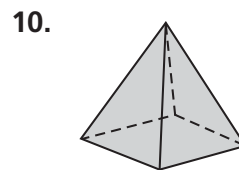
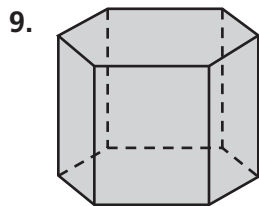
Identify the three-dimensional shape or shapes you see that describe the objects.



Identify the three-dimensional shape that has the faces shown.



Identify the three-dimensional shape. Draw the faces.



11. Jack rolls up a poster and places it in a container. The container has 2 circular bases. Which three-dimensional shape does he use?

12. Sue reads a riddle: I have 5 faces. The faces are triangles and a rectangle. I look like a tent. What three-dimensional shape am I?

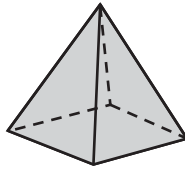
Lesson 13.2 (pp. 533–536)

Draw a line to match the three-dimensional shape with the net.

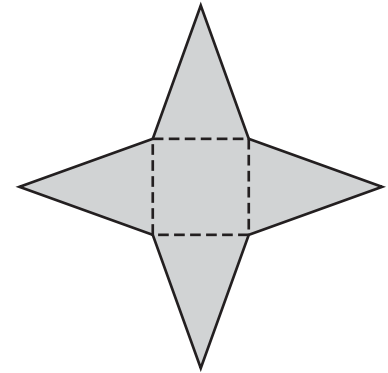
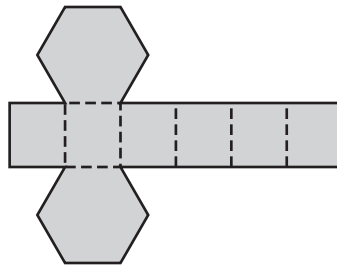
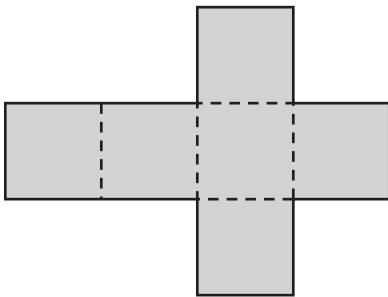
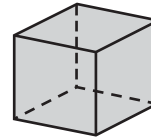
1.



2.

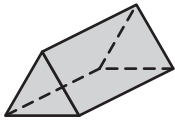


3.

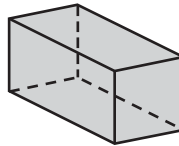


On the grid paper below, draw a net that can be cut to make a model of each three-dimensional shape.

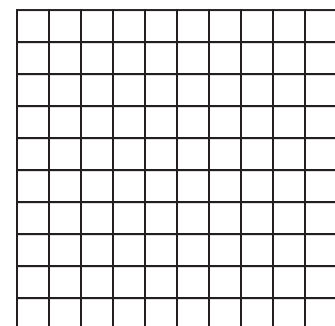
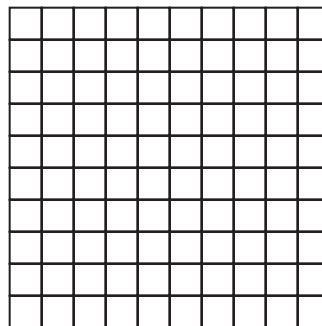
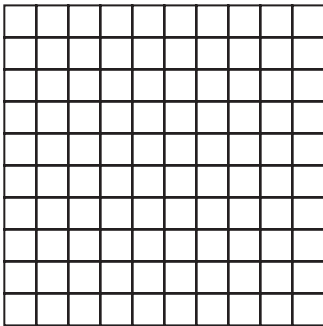
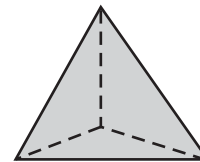
4.



5.



6.

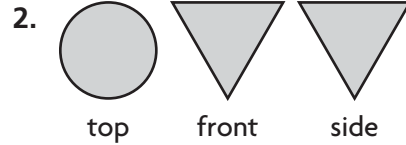
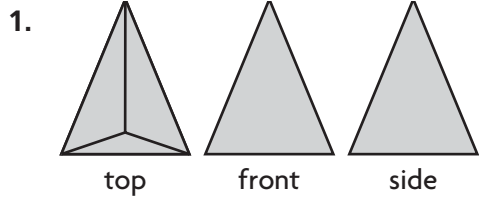


7. Jake makes a drawing of a rectangular prism. In how many directions can he measure the rectangular prism? What are they?

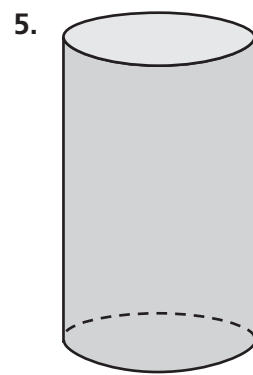
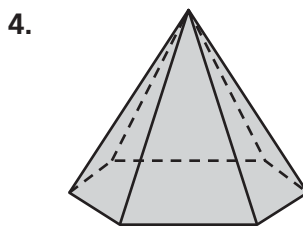
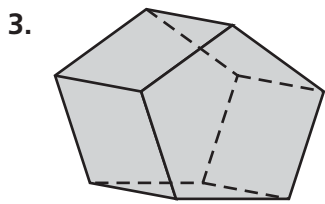
8. A prism has two congruent and parallel bases. How would you describe a pyramid?

Lesson 13.3 (pp. 539–542)

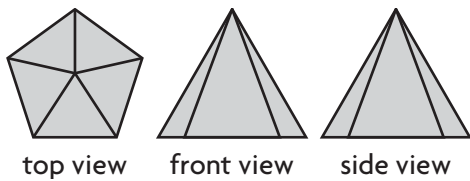
Name the three-dimensional shape that has these views.



Draw and label the top, front, and side views of each three-dimensional shape.



6. Identify the three-dimensional shape that matches the views below.



7. Lin has a three-dimensional shape that looks like a circle from the top and a triangle from the side. What three-dimensional shape does Lin have?

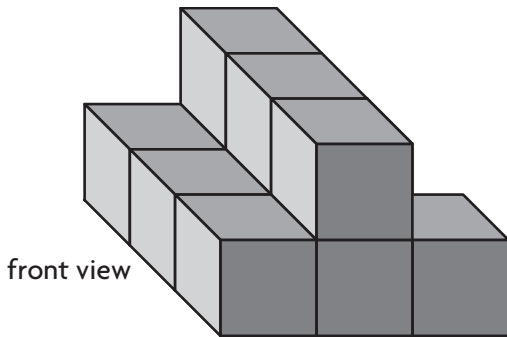
8. Tony bought a large box of cereal. Which two-dimensional shape describes the side view of the box?

9. Name the two-dimensional shape that is the top view of a cube.

Lesson 13.4 (pp. 543–546)

Use cubes to build the shape. Then draw the top, front, and side views.

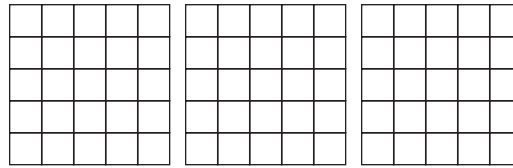
1.



top view

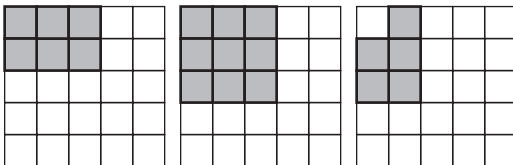
front view

side view



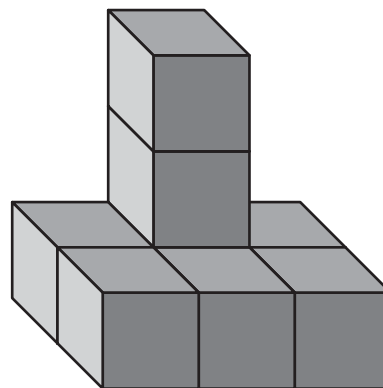
Build a three-dimensional shape from the given views.

2. top view front view side view



Lesson 13.5 (pp. 547–550)

- Steve built this model with connecting blocks. If he wanted to change this model into a model of a cube that is 3 cubes long, 3 cubes wide, and 3 cubes high, how many more connecting blocks would Steve need?



- Lin drew a three-dimensional shape that has pentagons as bases and rectangles as faces. Name the shape Lin drew.

- On a table are a paint can and a ball of string. What three-dimensional shapes are on the table?
