

# Assignment

## Write

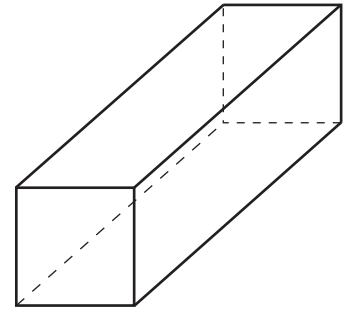
Define the term *cross-section* in your own words.

## Remember

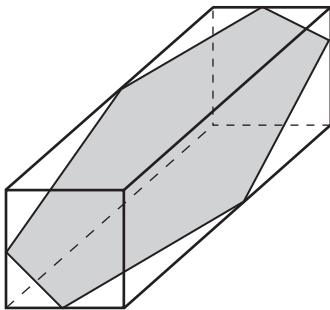
A prism is a geometric solid that has parallel and congruent polygonal bases and lateral sides that are parallelograms. The types of cross-sections of a cube are similar to the types of cross-sections of a rectangular prism (that is not a cube).

## Practice

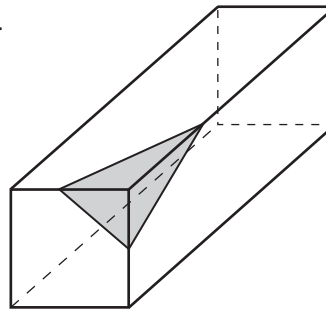
1. Dominique wants to paint a geometric border around her room. She has several sponges like the one shown. She decides to cut each of the sponges so that the cross-sections are different shapes. Then, she can dip the cut sponge in paint and stamp that shape on her wall. For each resulting sponge shown, describe how Dominique cut the sponge and what shape the sponge will make on the wall.



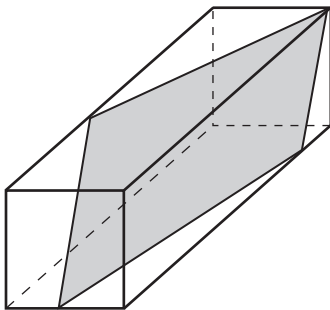
a.



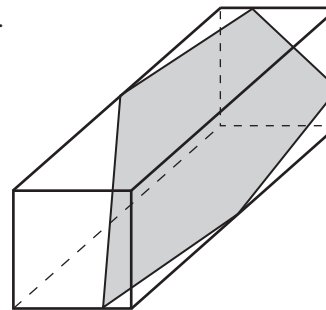
b.



c.



d.



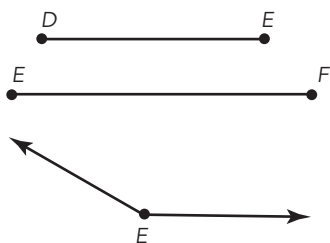
2. Describe the cross-section that results from the intersection of a plane and a right rectangular prism as described in each statement.
- A plane intersects exactly three vertices of a cube.
  - A plane intersects two opposite vertices of the base of a cube, but is not perpendicular to the base. The plane intersects two edges of the other base of the cube.
  - A plane intersects a right rectangular prism parallel to its rectangular base.
  - A plane intersects two opposite vertices of the base, but is not parallel to the base. The plane does not intersect the other base.

## Stretch

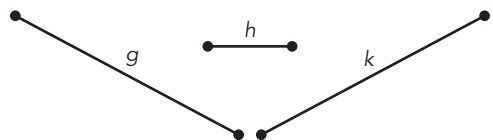
Describe all of the possible shapes that can be created by taking cross-sections of a cylinder. Use clay to demonstrate each cross-section.

## Review

1. Construct  $\triangle DEF$  using the two line segments and included angle shown.



2. Construct a triangle using the given sides.



3. Use the diagram of three intersecting line segments to identify the specified angle pairs.

- supplementary angles
- vertical angles

4. Determine the area and circumference of each circle with the given dimension. Use 3.14 for  $\pi$  and round to the nearest hundredth, if necessary.

- $d = 5.2$  ft
- $r = 14.9$  cm

