Lesson 24: Surface Area
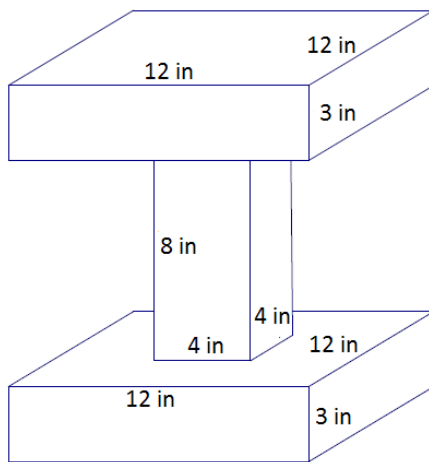
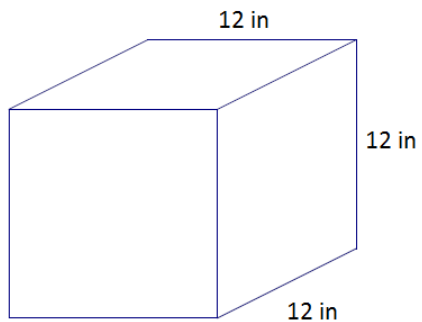**Classwork**

Example 1

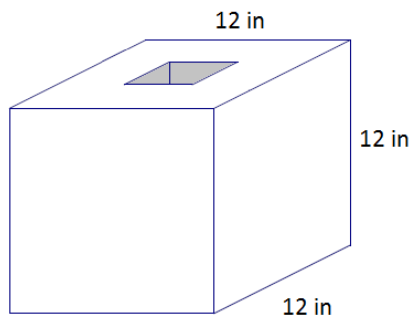**Example 2**

a.   Determine the surface area of the cube.

b.   A square hole with a side length of   inches is drilled through the cube. Determine the new surface area.

12 in

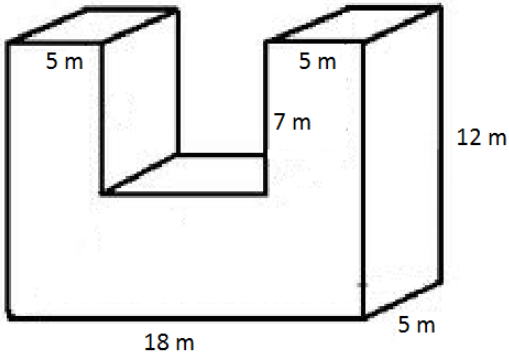12 in

12 in

Example 3

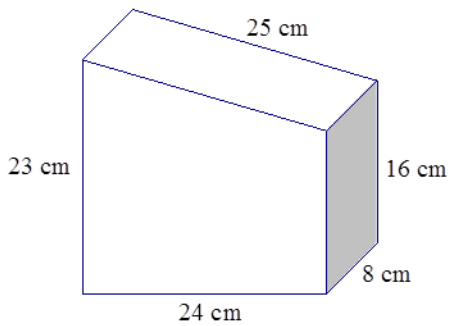A right rectangular pyramid has a square base with a side length of 10 inches. The surface area of the pyramid is   in^2.
Find the height of the four lateral triangular faces.
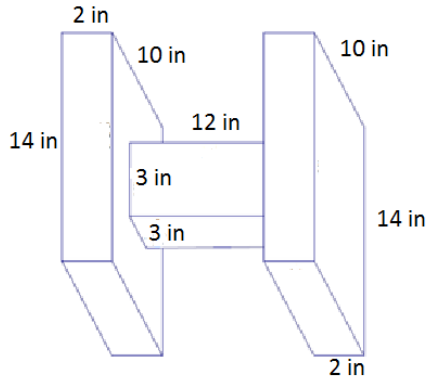
Exercises 1–8

1.   Determine the surface area of each figure. Assume all faces are rectangles unless it is indicated otherwise.
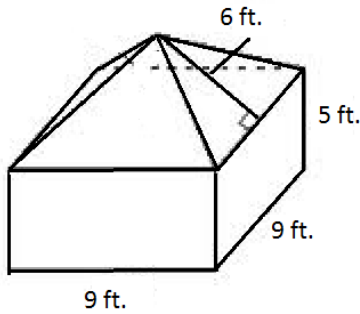

2.   In addition to your calculation, explain how the surface area was determined.
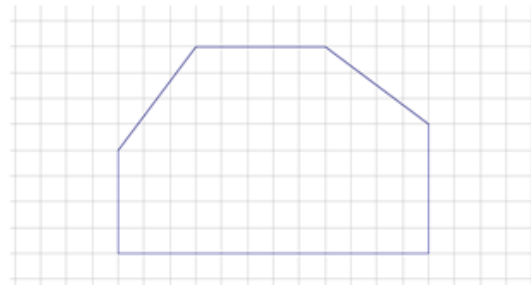
3.

2 in

10 in   10 in

12 in

14 in

3 in

3 in   14 in

2 in

4. In addition to your calculation, explain how the surface area was determined.
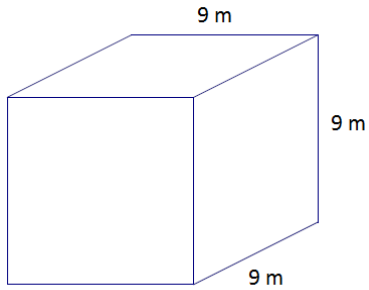
6 ft.

5 ft.

9 ft.

9 ft.

5. A hexagonal prism has the following base and has a height of   units. Determine the surface area of the prism.
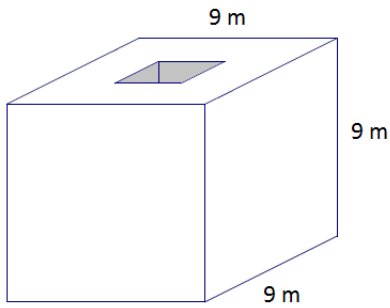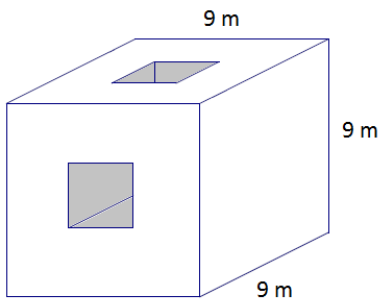
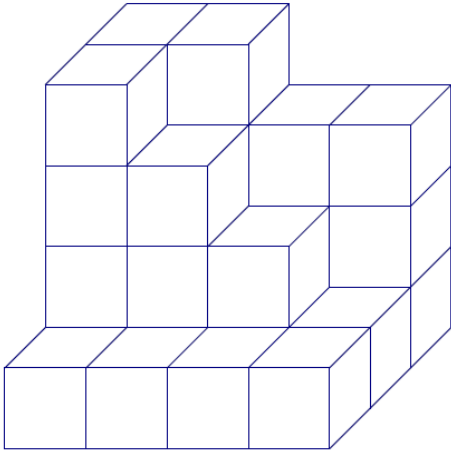6. Determine the surface area of each figure.

    a.

    b. A cube with a square hole with   m side lengths has been drilled through the cube.

    c. A second square hole with   m side lengths has been drilled through the cube.

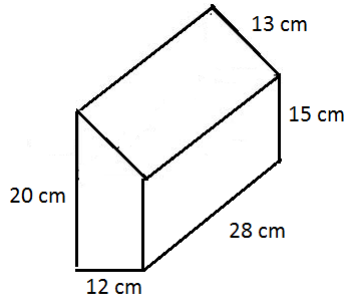7. The figure below shows   cubes with an edge length of   unit. Determine the surface area.

8. The base rectangle of a right rectangular prism is   ft.   ft. The surface area is   ft^2. Find the height.
    Let   be the height in feet.
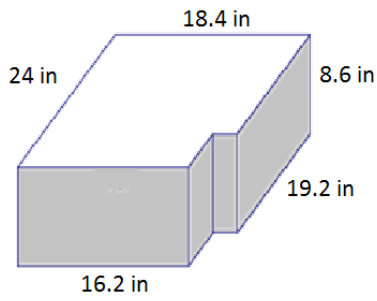
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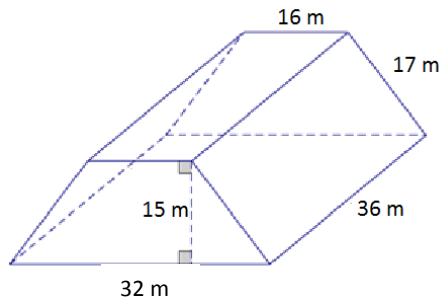## Problem Set

Determine the surface area of each figure.

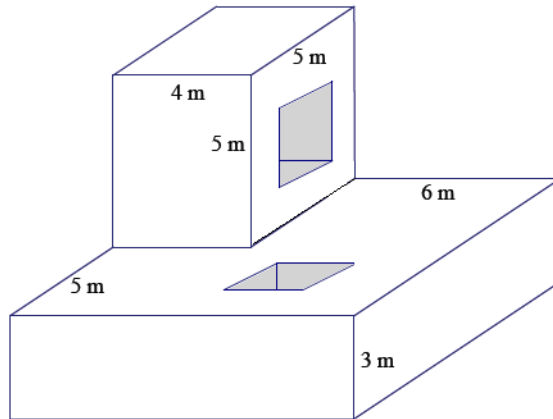1. In addition to the calculation of the surface area, describe how you found the surface area.

2.

3.

4. Determine the surface area after two square holes with a side length of   m are drilled through the solid figure composed of two rectangular prisms.

5. The base of a right prism is shown below. Determine the surface area if the height of the prism is   cm. Explain how you determined the surface area.