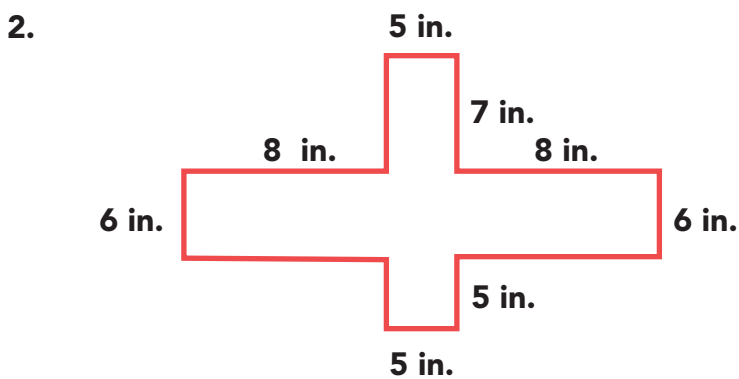
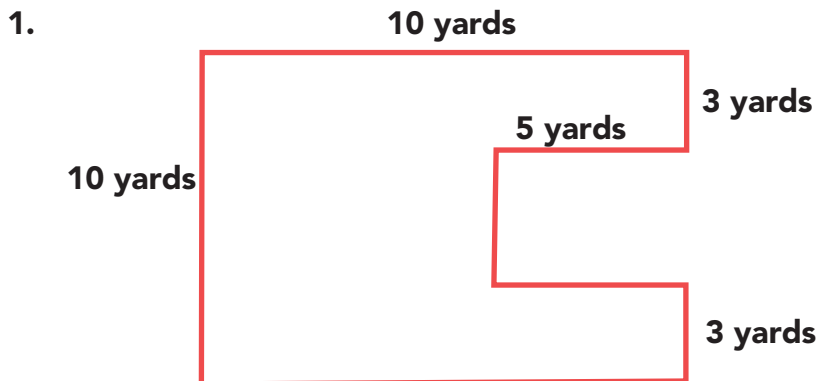


Objective Surface Area of Rectangular Prisms and Pyramids

Warm-Up



Calculate the area of each composite figure.

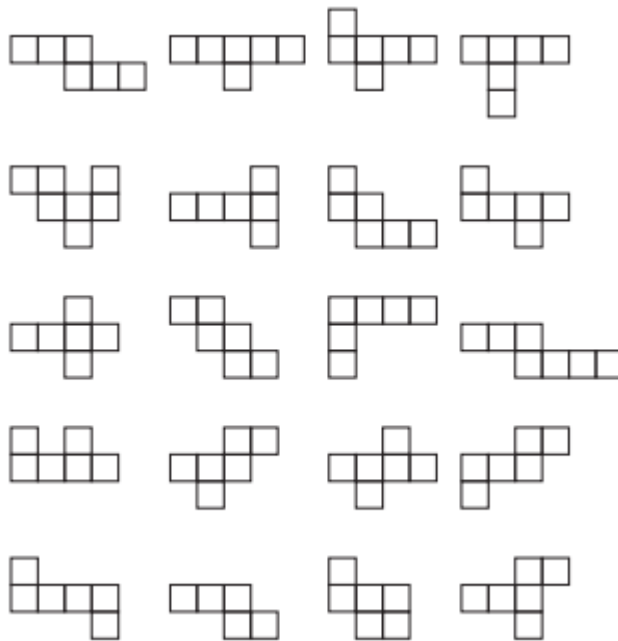


## GETTING STARTED

### Breaking Down a Cube

A net is a two-dimensional representation of a three-dimensional geometric figure. A net is cut out, folded, and taped to create a model of a geometric solid.

1. Click on the link and follow the activity [NCTM](#)
2. Are there other nets that form a cube? Circle the other 11 cutouts that can form a cube.



3. How did you determine which are nets of cubes?

4. What do all of the nets for a cube have in common? Consider the number of faces, edges, and vertices in your explanation.

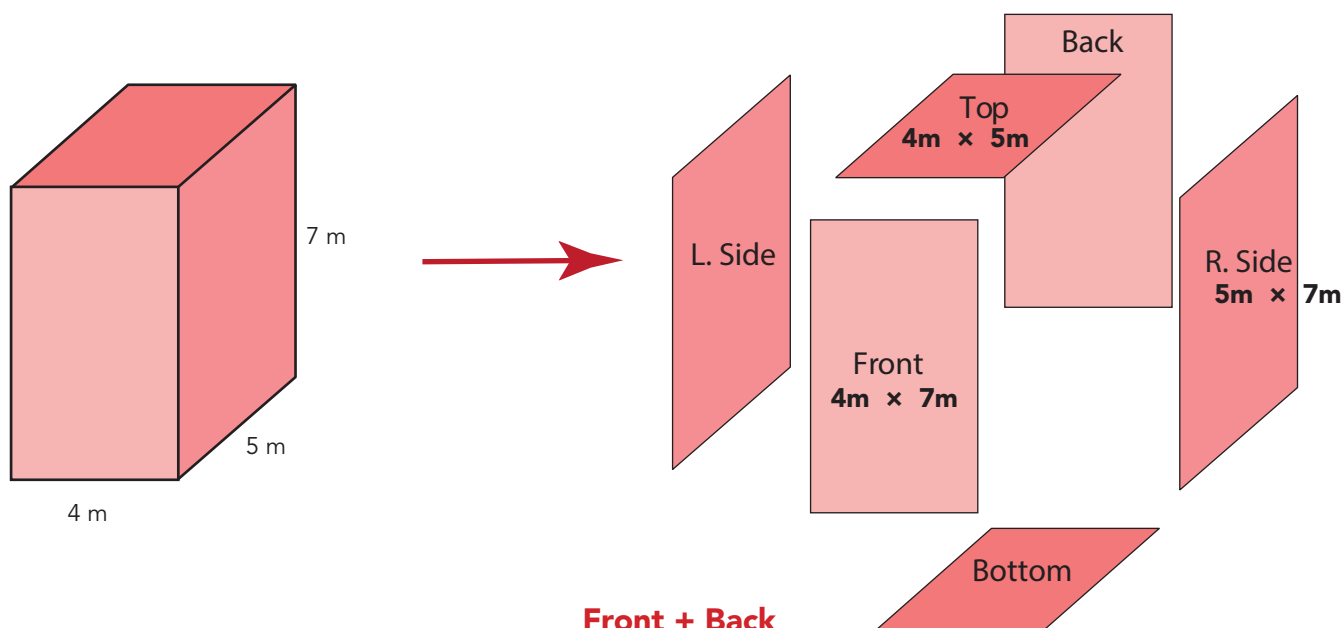


A net has all these properties:

- The net is cut out as a single piece.
- All of the faces of the geometric solid are represented in the net.
- The faces of the geometric solid are drawn such that they share common edges.

The surface area of a polyhedron is the total area of all its two-dimensional faces. Consider the cube you created.

1. Follow the decomposed figure to calculate surface area



Front and back areas are equal

$$\text{Front + Back} \\ \downarrow \\ 2 \times (4 \text{ m} \times 7 \text{ m})$$

L. Side and R. Side areas are equal

$$\text{L.Side + R.Side} \\ \downarrow \\ 2 \times (5 \text{ m} \times 7 \text{ m})$$

Top and Bottom areas are equal

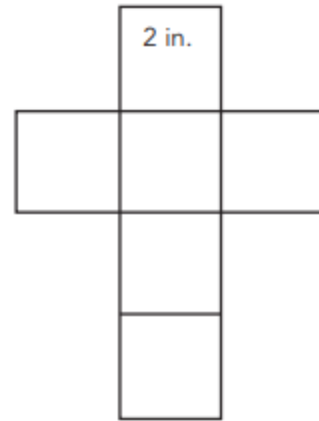
$$\text{Top + Bottom} \\ \downarrow \\ 2 \times (4 \text{ m} \times 5 \text{ m})$$

### Total SURFACE AREA

$$2 \times (4 \text{ m} \times 7 \text{ m}) \quad + \quad 2 \times (5 \text{ m} \times 7 \text{ m}) \quad + \quad 2 \times (4 \text{ m} \times 5 \text{ m}) \\ 56 \quad \quad \quad + \quad \quad \quad 70 \quad \quad \quad + \quad \quad \quad 40 \quad \quad \quad = \quad 166$$

The total surface area is **166 square meters**

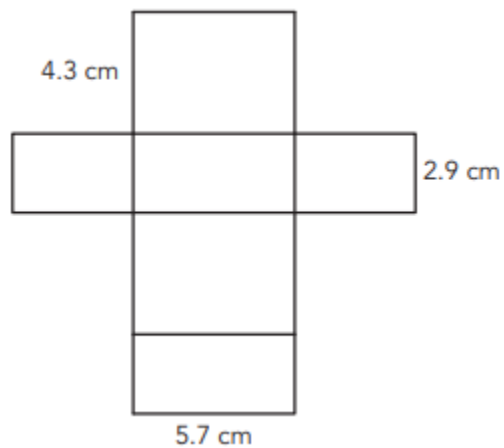
3. Consider the cube net shown. Calculate the surface area.



4. What is the surface area of a unit cube?

5. Let's consider a different rectangular prism.

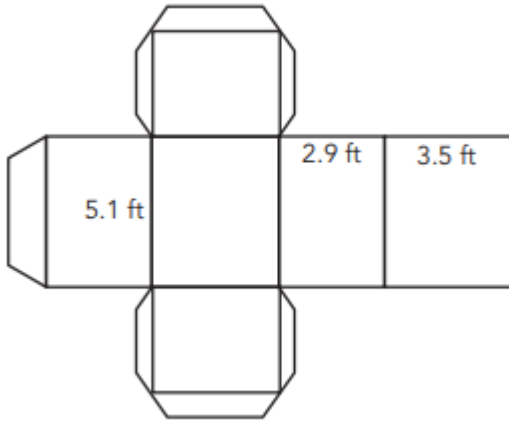
a. Use the net to estimate the surface area of the right rectangular prism.



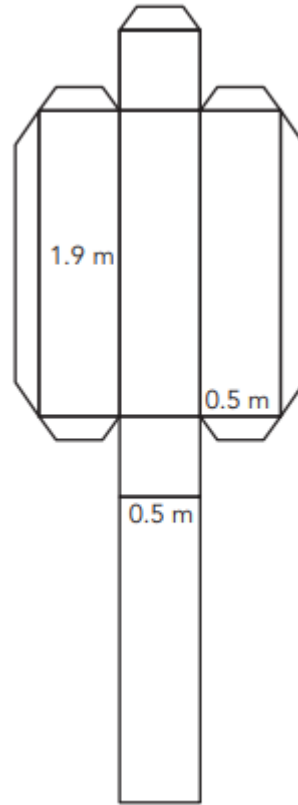
b. Calculate the surface area of the right rectangular prism.  
Explain your calculation

6. Calculate the surface area of the solid figure represented by each net.

a.

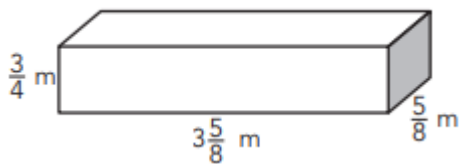


b.

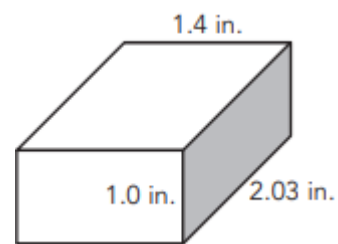


7. Draw a net to represent each solid figure. Label each net with measurements and then calculate the surface area of the solid figure

a.



b.





**LESSON 3.3a**  
**Breaking the Fourth Wall**

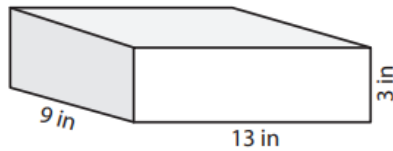


**Objective** Surface Area of Rectangular Prisms and Pyramids

Find the surface area of each rectangular prism. **Show ALL WORK AND CALCULATIONS**

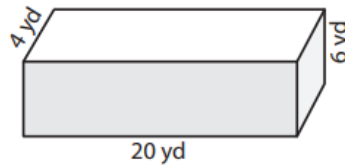
Find the surface area of each rectangular prism.

1)



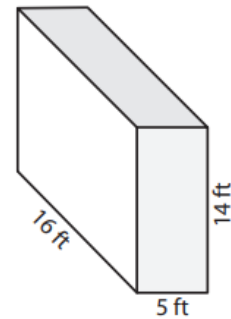
Surface Area = \_\_\_\_\_

2)



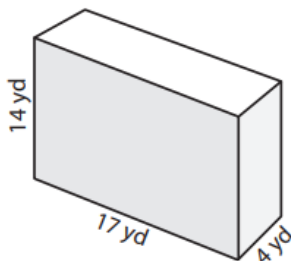
Surface Area = \_\_\_\_\_

3)



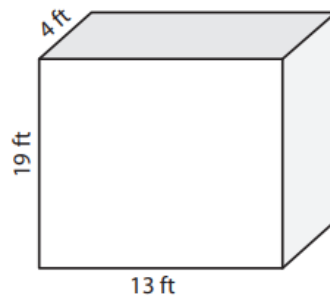
Surface Area = \_\_\_\_\_

4)



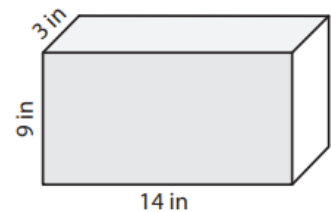
Surface Area = \_\_\_\_\_

5)



Surface Area = \_\_\_\_\_

6)



Surface Area = \_\_\_\_\_