

10.4 Surface Area of Triangular Prisms (6.G.4)

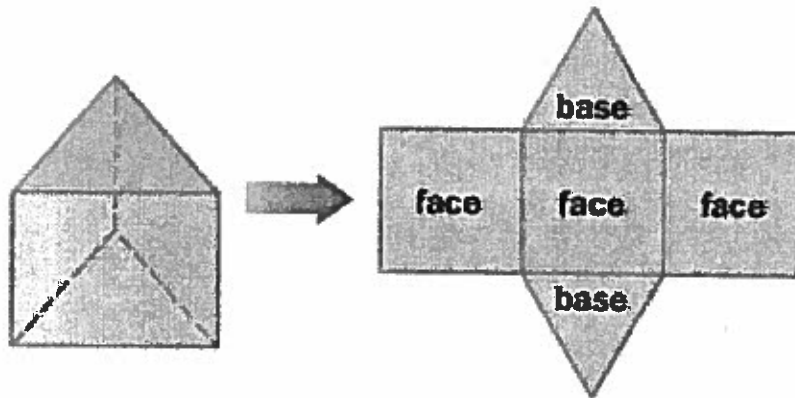
Key

Key Concepts: Surface Area of Triangular Prisms

The surface area of a triangular prism is the sum of the areas of the two triangular bases and three rectangular faces.

***HINT:** Find the area of each side, and then add them all up together.

Model



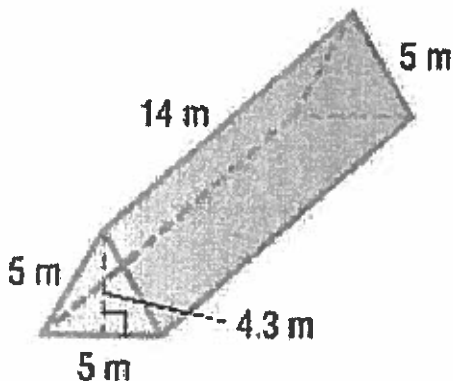
- Use the triangle area formula to find the area of the two triangular bases. The two triangles are congruent shapes.
- Use the parallelogram area formula to find the area of each rectangular face. The three rectangles may or may not be the same size.

Step:

1. Write the formula.
2. Fill in the number.
3. Answer.

Guided Practice:

Find the surface area of the triangular prism.



$$\begin{aligned} \triangle \\ A &= \frac{1}{2} \cdot b \cdot h \\ A &= \frac{1}{2} \cdot 5 \cdot 4.3 \\ A &= 10.75 \text{ m}^2 \end{aligned}$$

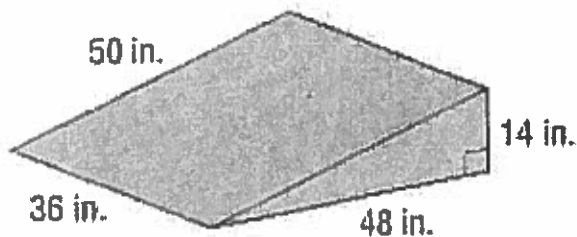
$$\begin{aligned} \square \\ A &= b \cdot h \\ A &= 14 \cdot 5 \\ A &= 70 \text{ m}^2 \end{aligned}$$

$$\begin{aligned} SA &= \frac{10.75}{} + \frac{10.75}{} + \frac{70}{} + \frac{70}{} + \frac{70}{} \\ SA &= 231.5 \text{ m}^2 \end{aligned}$$

Key

10.4 Surface Area of Triangular Prisms (6.G.4)

A skateboard ramp is the shape of a triangular prism. If the entire ramp is to be painted, what is the surface area to be painted?



$$\begin{aligned} \triangle \\ A &= \frac{1}{2} \cdot b \cdot h \\ A &= \frac{1}{2} \cdot 48 \cdot 14 \\ A &= 336 \text{ in}^2 \end{aligned}$$

$$\begin{aligned} \square \text{ (top)} \\ A &= b \cdot h \\ A &= 36 \cdot 50 \\ A &= 1800 \text{ in}^2 \end{aligned}$$

$$\begin{aligned} \square \text{ (bottom)} \\ A &= b \cdot h \\ A &= 48 \cdot 36 \\ A &= 1728 \text{ in}^2 \end{aligned}$$

$$\begin{aligned} \square \text{ (side)} \\ A &= b \cdot h \\ A &= 14 \cdot 36 \\ A &= 504 \text{ in}^2 \end{aligned}$$

$$SA = \underline{336} + \underline{336} + \underline{1800} + \underline{1728} + \underline{504}$$

$$SA = 4704 \text{ in}^2$$

Building on the Essential Question - How is the area of a rectangle related to the surface area of a triangular prism?

A triangular prism has 3 rectangle faces.

Rate Yourself - How confident are you about surface area of triangular prisms? Check the box that applies.

