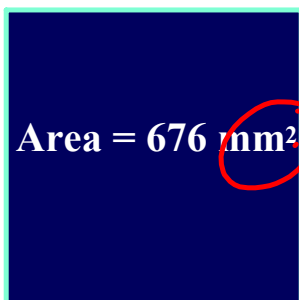


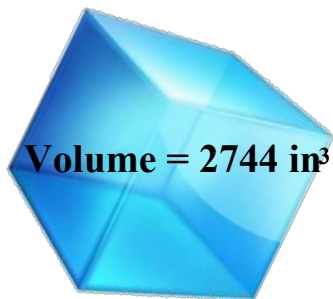
# Warm Up Questions

1.



Determine the side length of the square.

2.



Determine the edge length of the cube.

$$\begin{aligned} 1. \quad \sqrt{676} &= 2 \times 2 \times 13 \times 13 \\ &= 2 \times 13 \\ &= 26 \end{aligned}$$

$$\begin{aligned} 1. \quad \sqrt[3]{2744} &= 2 \times 2 \times 2 \times 7 \times 7 \times 7 \\ &= 2 \times 7 \\ &= 14 \end{aligned}$$

**Tricky**

Determine the side length of  
a square if the area is  $81x^4y^2$

$$\sqrt{81x^4y^2} \rightarrow 3 \times 3 \times 3 \times 3 \times x \cdot x \cdot x \cdot x \times y \cdot y$$
$$3 \times 3 \times x \cdot x \cdot y$$
$$9x^2y$$

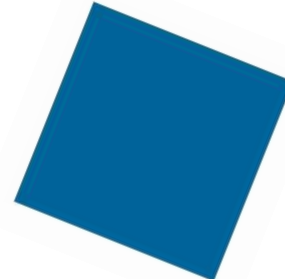


*Area*



**Let's Take a Closer Look!!**

*Surface Area*



*Volume*



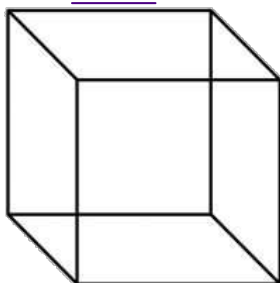
# Formulas

Square



$$\text{Area} = l \times h$$

Cube



$$\begin{aligned}\text{Volume} &= l \times w \times h \\ \text{Surface Area} &= 6(l \times w)\end{aligned}$$

A cube has a  ~~$l \times w$~~  surface area of  $1944m^2$ . What is its volume?

*same* *same* *same as*

$$\begin{array}{r} 1944 \\ \div 6 \\ \hline \sqrt{324} \end{array} \rightarrow 2 \times 2 \times 3 \times 3 \times 3 \times 3$$

$$2 \times 3 \times 3 = 18$$

$$\begin{aligned} V &= l \times w \times h \\ V &= s \times s \times s \\ V &= 18 \times 18 \times 18 \\ &= 5832m^3 \end{aligned}$$

**You Try!**

$$6(12 \times 12) \\ 6(l \times w)$$

864

$$V = l \times w \times h$$

A cube has a surface area of ~~924~~ 864 m<sup>2</sup>. What is its volume?

$$\begin{array}{r} 864 \\ \div 6 \\ \hline 144 \end{array} \rightarrow (2 \times 2) \times (2 \times 2) \times (3 \times 3)$$

$$V = l \times w \times h. \quad 2 \times 2 \times 3 = 12$$

$$V = 12 \times 12 \times 12 \\ 1728 \text{ m}^3$$

A cube has a volume of  $3375\text{m}^3$ . What is its surface area?

$$\sqrt[3]{3375} \quad (3 \times 3 \times 3) \times (5 \times 5 \times 5)$$

$$3 \times 5 = 15$$

Surface Area

$$\begin{aligned} SA &= 6(l \times w) \\ &= 6(15 \times 15) \\ &= 1350\text{m}^2 \end{aligned}$$



You Try!

$$V = l \times w \times h \quad 159 \times 189 \times 189$$

$$6751269 \text{ m}^3$$

A cube has a volume of ~~1755~~  $\text{m}^3$ . What is its surface area?

$$6(l \times w)$$

$$\sqrt[3]{6751269} \rightarrow 3 \times 3 \times 3 \times 3 \times 3 \times 3 \times 3 \times 3 \times 3 \times 7$$

$$3 \times 3 \times 3 \times 7$$

$$\begin{aligned} SA &= 6(l \times w) = 189 \\ &= 6(189 \times 189) \\ &= 214326 \text{ m}^2 \end{aligned}$$



Funwork for Today

Pg. 147

9, 13, 17

Pg. 149

2d, 3f, 8df, 10

