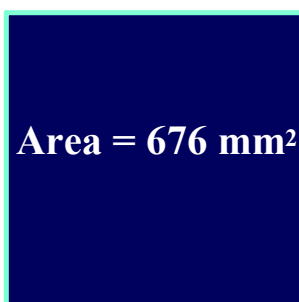


Warm Up Questions

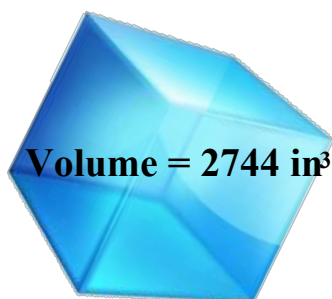
1.



Determine the side length of the square.

26

2.



Determine the edge length of the cube.

14

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

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

Tricky

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

$$\begin{array}{l}
 81 \rightarrow (3 \times 3) \times (3 \times 3) = 3 \cdot 3 \cdot x \cdot x \cdot y \\
 x^4 \rightarrow (x \cdot x) \cdot (x \cdot x) = \boxed{9x^2} \\
 y^2 \rightarrow (y \cdot y)
 \end{array}$$

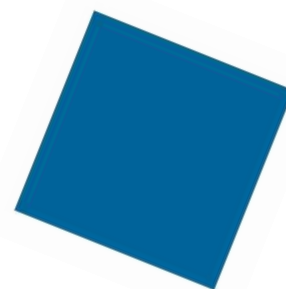


Area



Let's Take a Closer Look!!

Surface Area



Volume



Formulas

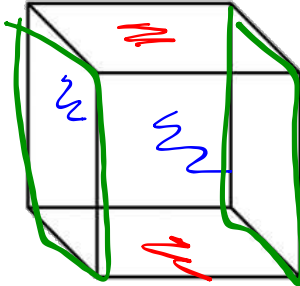
Square



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

length and width
are the same

Cube



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

Same

Area / Surface Area \rightarrow units² (ex. m²)

Volume \rightarrow units³ (ex. cm³)

length/width/height \rightarrow units¹ (ex. km)

A cube has a surface area of 1944m^2 . What is its volume?

① Find A:

$$* A = \frac{\text{Surface Area}}{6}$$

$$A = \frac{1944\text{m}^2}{6}$$

$$A = 324\text{m}^2$$

② Find the edge length

$$\sqrt{324} = ?$$

$$324 = 2 \times 2 \times 3 \times 3 \times 3 \times 3$$

$$= 2 \cdot 3 \cdot 3$$

$$= 18\text{m}$$

$$\text{length} = 18\text{m}$$

③ Find Volume

$$V = L \times w \times h$$

$$V = 18 \times 18 \times 18$$

$$V = 5832\text{m}^3$$

You Try!

A cube has a surface area of 864 m^2 . What is its volume?

$$\textcircled{1} A = \frac{864 \text{ m}^2}{6}$$

$$A = 144 \text{ m}^2$$

$$\textcircled{2} 144 \rightarrow 2 \times 2 \times 2 \times 2 \times 3 \times 3$$

$$= 2 \cdot 2 \cdot 3$$

$$= 12 \text{ m}$$

$$s = 12 \text{ m}$$

$$\textcircled{3} V = l \times w \times h$$

$$V = 12 \times 12 \times 12$$

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

A cube has a volume of 3375m^3 . What is its surface area?

① Find l

$$\sqrt[3]{3375} = ?$$

$$3375 \rightarrow 3 \times 3 \times 3 \times 5 \times 5 \times 5$$

$$= 3 \cdot 5$$

$$= 15\text{m}$$

$$\text{length} = \underline{15\text{m}}$$

② Surface = $6(l \times w)$
Area

Surface = $6(15 \times 15)$
Area

Surface = 1350m^2
Area

You Try!

A cube has a volume of 2197m^3 . What is its surface area?

$$\textcircled{1} \sqrt[3]{2197} = ?$$

$$2197 \rightarrow 13 \times 13 \times 13$$

$$= 13$$

$$\text{length} = 13\text{m}$$

$$\textcircled{2} \text{S.A.} = 6(l \times w)$$

$$\text{S.A.} = 6(13 \times 13)$$

$$\boxed{\text{S.A.} = 1014\text{m}^2}$$



Funwork for Today

Pg. 147
9, 13, 17

Pg. 149
2d, 3f, 8df, 10

