

Warm Up Questions

1. The Mayan used several different calendar systems; one system used 365 days, another system used 260 days. Suppose the first day of both calendars occurred on the same day. After how many days would they again occur on the same day? About how long is this in years? Assume 1 year has 365 days.
2. A cube has surface area 6534 square feet.
What is its volume?
3. The volume of a cube is 2744. What is the surface area?

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$$260 \rightarrow 2 \times 2 \times 5 \times 13 = 2^2 \times 5^1 \times 13^1$$

$$365 \rightarrow 5 \times 73 = 5^1 \times 73^1$$

$$2^2 \times 5^1 \times 13^1 \times 73$$

$$4 \times 5 \times 13 \times 73$$

$$= \underline{\underline{18980 \text{ Days}}}$$

$$\begin{array}{r} 18980 \text{ Days} \\ \div 365 \text{ Days} \\ \hline = \underline{\underline{52 \text{ years}}} \end{array}$$

A cube has surface area 6534 square feet.
What is its volume?

$$\begin{array}{l} 6534 \rightarrow \text{Surface Area} \\ \div 6 \rightarrow \text{Sides} \end{array}$$

$$= 1089 \rightarrow \text{Area of a Square}$$

$$\begin{aligned} \sqrt{1089} &= 3 \cdot 3 \cdot 11 \cdot 11 \\ &= (3 \times 3)(11 \times 11) \\ &= 3 \times 11 \\ &= 33 \end{aligned}$$

$$\begin{aligned} \sqrt{1089} &= 33 \\ V &= l \times w \times h \\ V &= 33 \times 33 \times 33 \\ V &= \underline{\underline{35,937}} \end{aligned}$$

3. The volume of a cube is 2744. What is the surface area?

$$\sqrt[3]{2744} \rightarrow (2 \times 2 \times 2) \times (7 \times 7 \times 7)$$

$$= 2 \times 7$$

$$= 14$$

$$\begin{aligned} SA &= 6(l \times w) \\ &= 6(14 \times 14) \\ &= 1176 \end{aligned}$$

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9, #10, #13
#17

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#2 a, b
#3 e, f
#10