

Warm Up Questions

1. Use the least common multiple to help determine each answer.

a) $\frac{8}{3} + \frac{5}{11}$

b) $\frac{13}{5} - \frac{4}{7}$

c) $\frac{9}{10} \div \frac{7}{3}$

2. 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.
3. A cube has surface area 6534 square feet.
What is its volume?

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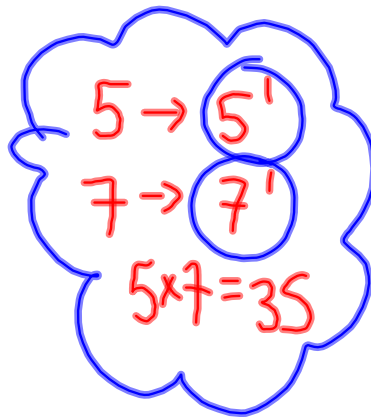
$$\text{a) } \frac{8 \cdot 11}{3 \cdot 11} + \frac{5 \cdot 3}{11 \cdot 3}$$

$$\frac{88}{33} + \frac{15}{33} \\ = \frac{103}{33}$$



$$\text{b) } \frac{13 \cdot 7}{5 \cdot 7} - \frac{4 \cdot 5}{7 \cdot 5}$$

$$\frac{91}{35} - \frac{20}{35} \\ \frac{71}{35}$$



$$\text{c) } \frac{9}{10} \div \frac{7}{3}$$

$$\frac{9}{10} \times \frac{3}{7} \\ \frac{27}{70}$$

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$$\begin{aligned} 260 &\rightarrow 2 \times 2 \times 5 \times 13 &= 2^2 \times 5^1 \times 13^1 \\ 365 &\rightarrow 5 \times 73 &= 5^1 \times 73^1 \end{aligned}$$

$$\begin{aligned} &2^2 \times 5^1 \times 13^1 \times 73 \\ &4 \times 5 \times 13 \times 73 \\ &= \underline{\underline{18980 \text{ Days}}} \end{aligned}$$

$$\begin{aligned} &18980 \text{ Days} \\ &\div 365 \text{ Days} \\ &= \underline{\underline{52 \text{ years}}} \end{aligned}$$

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

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

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

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

$$\begin{aligned} \sqrt{1089} &= 33 \\ V &= l \times w \times h \\ V &= 33 \times 33 \times 33 \\ V &= \underline{\underline{35,937 \text{ ft}^3}} \end{aligned}$$