

October 8, 2012

Decimals in Base 5

$$\begin{array}{r} 0.32_5 \\ \hline 25 \ 5 \ 1 \end{array}$$

$\frac{1}{5} \ 2 \frac{1}{25}$

$$3 \times \frac{1}{5} + 2 \times \frac{1}{25}$$

$$\frac{3}{5} + \frac{2}{25} = 0.68$$

Oct 8-1:28 PM

Convert  $0.68$  to Base 5

$$0.68 \times 5 = 3.4 \quad 0.32_5$$

$$0.4 \times 5 = 2.0$$

$$0.0 \times 5 = 0$$

Oct 8-1:42 PM

$$11b \quad 42_x = \text{thirty}$$

$$\begin{array}{r} 4 \ 2 \\ \hline ? \ 1 \end{array}$$

$$4 \times 7 = 28$$

$$4x + 2 = 30$$

Oct 8-1:45 PM

15d Convert  $0.7$  to base 5

$$0.7 \times 5 = 3.5 \quad 0.3222\ldots$$

$$0.5 \times 5 = 2.5$$

$$0.5 \times 5 = 2.5$$

Oct 8-1:49 PM

## Chapter 11 - Mayan #'s

Convert from Mayan to decimal

$$\begin{array}{r} 8 \\ | \dots j \dots | 12 \\ 20 \qquad 1 \end{array}$$



$$8 \times 20 + 12 \times 1$$

$$160 + 12 = 172$$

Oct 8-2:13 PM

## Convert

$$\begin{array}{r} 111. \underline{j} \cdot \underline{j} \cdots \\ 400 \qquad 20 \qquad 1 \\ 16 \qquad \qquad \qquad 3 \end{array} \quad \text{to Base 10}$$

$$16 \times 400 + 20 + 3$$

$$64023$$

Oct 8-2:17 PM

Convert 157 to Mayan

$$\begin{array}{r}
 \boxed{7} \quad | \quad \boxed{17} \\
 20 \qquad \qquad | \\
 \textcircled{7} \\
 20 \overline{)157} \\
 \underline{140} \\
 \textcircled{17} \\
 \end{array}$$

1.. ; 111..

Oct 8-2:21 PM

$$1 \times 360 + 11 \times 20 + 3$$

$$360 + 220 + 3$$

$$583 = \underline{583}$$

Oct 8-2:24 PM

Convert to decimal >

$$\begin{array}{cccccc} 11 & ; & 1 & ; & \textcircled{S} & \\ \textcircled{1} & ; & \textcircled{1} & ; & \textcircled{S} & \\ \hline 360 & 20 & 1 & & & \end{array}$$

zero

"Solar"

$$10 \times 360 + 5 \times 20 + 0$$

460

Oct 8-2:28 PM

Convert 1038 to Mayan Solar.

$$\begin{array}{ccccccc}
 & .. & ; & \textcolor{blue}{\cancel{111}} & ; & \textcolor{blue}{\cancel{111}} & ... \\
 & \textcolor{red}{2} & | & \textcolor{green}{15} & | & \textcolor{black}{10} & \\
 360 & & & 20 & & & \\
 \\[10pt]
 360 \overline{)1038} & & & 20 \overline{)318} & & & \\
 & \textcolor{red}{2} & & 20 & & & \\
 & \cancel{720} & & \cancel{20} & & & \\
 & \textcolor{green}{518} & & 118 & & & \\
 & & & \cancel{100} & & & \\
 & & & & \textcolor{green}{18} & & 
 \end{array}$$

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## Mayan addition

$$\begin{array}{r} 11; 1.. \\ + \quad 11.; 11... \\ \hline : \quad ; \quad 111. \cdot ; \quad 111 \dots 1 \\ \cdot \quad j \quad \cdot \quad ; \quad | \quad 111 \\ \cdot \quad j \quad \cdot \quad ; \quad | \quad 111 \\ \hline \end{array}$$

Oct 8-2:34 PM

15d Chapter 10  
Convert 0.7 to base 5

$$0.7 \times 5 = 3.5$$

$$0.5 \times 5 = 2.5$$

$$0.5 \times 5 = 2.5$$

- 0322 -

Oct 8-3:13 PM

Convert  $0.\overline{42}_5$  to base 10

$$0.\overline{4}2\overline{5}$$

$$4 \times \frac{1}{5} + 2 \times \frac{1}{25}$$

$$\frac{4}{5} + \frac{2}{\cancel{5}} =$$

Oct 8-3:17 PM

# 2b

$$\begin{array}{r} 204 \\ \times 64 \\ \hline 8 \end{array}$$

116

42 x?

$$= 30$$

$$4 \times \underline{7} = 28$$

Oct 8-3:20 PM

## Converting Mayan #'s



Mayan  $\frac{1}{2} \cdot 13 \cdot 7$   
 $\frac{1}{2} \cdot 13 \cdot 7$   
 $\frac{1}{2} \cdot 13 \cdot 7$

$$2 \times 400 + 13 \times 20 + 7 \times 1$$
$$800 + 260 + 7$$
$$\boxed{1067}$$

Oct 8-3:23 PM

$$4400 + 0 + 1$$

Oct 8-3:54 PM

Convert 157 to Mayan

$$\begin{array}{r}
 & 400 & 20 & | \\
 20 & \overline{)157} & 1.. & ; \boxed{111\dots} \\
 & \underline{140} & \downarrow & \\
 & \underline{\underline{17}} & \text{---} &
 \end{array}$$

Oct 8-3:56 PM

Mayan "Solar" numbers, 15

A horizontal timeline diagram illustrating the conversion of 18.20 years into months and days. The timeline is divided into three main segments: 'years', 'months', and 'days'. The 'years' segment is labeled '18.20' with a yellow oval around it. The 'months' segment is labeled '20' and 'months'. The 'days' segment is labeled '1' and 'days'. Above the timeline, there are labels: '18.20' above the years, '20' above the months, and '1' above the days. To the left of the years, there is a question mark above a bracket spanning the first two segments. To the right of the days, there is a red exclamation mark above a bracket spanning all three segments.

$$2 \times 360 + 6 \times 20 + 15 \times 1$$

Oct 8-4:00 PM

Convert 1038 to Mayan Solar #.

$$\begin{array}{cccc} & 2 & 15 & 18 \\ \fbox{360} & 20 & & 1 \end{array}$$

$$360 \overline{)1038}$$

$$20 \overline{)318}$$

$$\dots ; \text{III}; \text{III} \dots$$

Oct 8-4:04 PM

Oct 8-4:08 PM

$$\begin{array}{l}
 \text{Convert } 0.\underline{4}2\underline{5} \text{ to decimal} \\
 \text{---} \\
 \begin{array}{r}
 \text{25} \quad \text{5} \quad | \quad \frac{1}{5} \quad \frac{1}{25}
 \end{array}
 \end{array}$$
  

$$\begin{array}{l}
 4 \times \frac{1}{5} + 2 \times \frac{1}{25} \\
 \frac{4}{5} + \frac{2}{25} = \frac{20}{25} + \frac{2}{25} = \frac{22}{25} \\
 = 0.\overline{88}
 \end{array}$$

Convert 0.7 to base 5.

$$0.7 \times 5 = 3.5$$
$$0.5 \times 5 = 2.5$$
$$0.5 \times 5 = 2.5$$

⋮ ⋮ ⋮

$0.322\dots$

Oct 8-4:26 PM

Oct 8-4:40 PM

$$\begin{array}{r} \underline{\underline{116}} \\ 4 \overline{)7} = \text{thirty} \\ \underline{\underline{4}} \quad \underline{\underline{7}} \\ ? \quad | \end{array}$$
$$4 \times \underline{\underline{7}} = 28$$

$$\begin{array}{r} 70 \\ \times 3 \\ \hline 210 \end{array}$$

**Step-by-step solution:**

1. **Multiplication:**  $7 \times 3 = 21$ . The tens digit 7 is circled in yellow, and the ones digit 1 is circled in red. A yellow arrow points from the circled 7 to the tens column of the multiplication result.

2. **Carrying:** The tens digit 2 from 21 is carried over to the tens column of the result.

3. **Second multiplication:**  $0 \times 3 = 0$ . The 0 is circled in red.

4. **Summing:**  $21 + 0 = 21$ . The 21 is circled in yellow, and the 1 is circled in red. A yellow arrow points from the circled 21 to the tens column of the final result.

5. **Final result:** The final result is 210, enclosed in a red oval.

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Convert from Mayan

$3 \cdot 400 + 12 \cdot 20 + 7 \cdot 1$

$1200 + 240 + 7$

$1447_{10}$

Oct 8-4:56 PM

Convert 157 to Mayan.

$20 \overline{)157}$

$140$

$17$

$1..;111..$

Oct 8-5:26 PM

Mayan Solar numbers

$2 \cdot 360$

$11 \times 20$

$3 \times 1$

$720 + 220 + 3$

$943$

Oct 8-5:30 PM

Convert 1038 to Mayan solar

$360 \overline{)1038}$

$720$

$318$

$20 \overline{)318}$

$200$

$118$

$100$

$18$

$..;111;j;111...s$

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$1;111$

$+ 111..j$

$-----$

$111..j$

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