

MAYAN SYSTEM

2 number systems

Pure base 20
(vigesimal)

modified Base 20

- digits run from 0 to 19
- vertical system
- powers of 20 with a factor of 18
- positional system

Symbols

(/ /) = 0

• = 1

— = 5

pg. 131 in your textbook

EX 6 • 12 •• 15 ≡ 19 ≡≡≡

Place Values

$$\overline{20^3 \times 18} = 144000's$$

$$\overline{20^2 \times 18} = 7200's$$

$$\overline{20^1 \times 18} = 360's$$

$$\overline{20^0} = 20's$$

$$\overline{20^0} = 1's$$

Write each numeral in Base-ten.

A) $\bullet\bullet \rightarrow \rightarrow 20's$

$(//) \rightarrow \rightarrow 1's$

$$2 \times 20 = 40$$

$$0 \times 1 = + 0$$

$$\boxed{40}$$

B) $\equiv \rightarrow \rightarrow 20's$

$\bullet\bullet\bullet \rightarrow \rightarrow 1's$

$$11 \times 20 = 220$$

$$8 \times 1 = + 8$$

$$\boxed{228}$$

C) $\equiv \rightarrow \rightarrow 360's$

$(//) \rightarrow \rightarrow 20's$

$\bullet \rightarrow \rightarrow 1's$

$$12 \times 360 = 4320$$

$$0 \times 20 = 0$$

$$1 \times 1 = + 1$$

$$\boxed{4321}$$

D) $\bullet \rightarrow \rightarrow 7200's$

$\bullet\bullet \rightarrow \rightarrow 360's$

$\bullet \rightarrow \rightarrow 20's$

$\text{—} \rightarrow \rightarrow 1's$

$$6 \times 7200 = 43200$$

$$2 \times 360 = 720$$

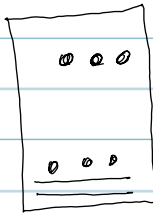
$$1 \times 20 = 20$$

$$5 \times 1 = + 5$$

$$\boxed{43945}$$

Write each number in Mayan.

A) 73



~~300's~~

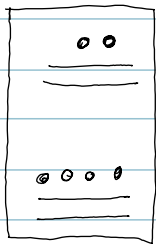
20's

1's

$$\begin{array}{r} 3 \\ 20 \overline{) 73} \\ - 60 \\ \hline 13 \end{array}$$

$$\begin{array}{r} 13 \\ 1 \overline{) 13} \\ - 13 \\ \hline 0 \checkmark \end{array}$$

B) 254



~~300's~~

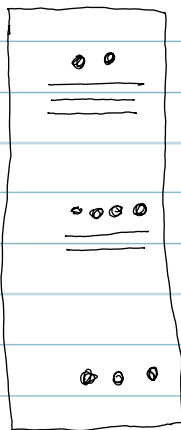
20's

1's

$$\begin{array}{r} 12 \\ 20 \overline{) 254} \\ - 20 \downarrow \\ \hline 54 \\ - 40 \\ \hline 14 \end{array}$$

$$\begin{array}{r} 14 \\ 1 \overline{) 14} \\ - 14 \\ \hline 0 \checkmark \end{array}$$

C) 6403



~~1200's~~

360's

20's

1's

$$\begin{array}{r} 17 \\ 360 \overline{) 6403} \\ - 360 \downarrow \\ \hline 2803 \\ - 2520 \\ \hline 283 \end{array}$$

$$\begin{array}{r} 14 \\ 20 \overline{) 283} \\ - 20 \downarrow \\ \hline 83 \\ - 80 \\ \hline 3 \end{array}$$

$$\begin{array}{r} 3 \\ 1 \overline{) 3} \\ - 3 \\ \hline 0 \checkmark \end{array}$$

