

Week-In-Review 4 on 3.1

1. Change 123_{seven} to base three.
2. Write the number preceding and succeeding the following numbers.

_____ ETT_{twelve} _____

_____ 12011_{three} _____

3. Using the definition of a^n , where n is any natural number, show the intermediate step.

$$6^5 = \quad = 7776$$

4. In the Egyptian numeration system, write the number 114,739.
5. What is 63_{nine} in base eight?
6. What system did the Babylonian numeration system use and explain what it means?
7. In the Mayan numeration system write the number 395.
8. Convert $ET2_{\text{twelve}}$ to base ten.
9. What is wrong with the numeral 34210_{four} ?
10. Name two properties that the Roman system has that Hindu Arabic system does not have and explain what they mean.
11. Write the first twenty counting numbers in base four.
12. If $12_b = 13_{\text{five}}$, what number base b is being used?
13. Convert 5604_{ten} to base eleven.
14. What symbol did the Mayans have that was not present in the Egyptian or early Babylonian systems?
15. In the Babylonian numeration system, write the number 351.
16. What property did the Egyptian numeration system have and explain what it means.
17. Write 2003 in Roman numerals.

18. True or False

- a. Base seven has six digits.
- b. For $n \in \mathbb{N}$ and $a \in \mathbb{W}$, $na = a \cdot a \cdot a \cdot \dots \cdot a$ [n factors of a]
- c. $3^4 \cdot 3^7 = 3^{28}$
- d. The largest digit in base six is 6.

19. Convert $\overline{VDCCXLVIII}$ to Hindu-Arabic numerals.

20. Complete the chart.

BASE TWELVE	BASE TEN	BASE EIGHT	BASE FIVE	BASE TWO
	46_{ten}			
		42_{eight}		
$12E_{\text{twelve}}$				
			402_{five}	
				101101_{two}