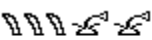



Name _____

Each of the 16 questions is worth 6 points plus 1 points for each of 4 homework problems for a total of 100

Convert the numeral to Hindu-Arabic form.

1) 
1) 

Write the Babylonian numeral as a Hindu-Arabic numeral.

2) 

Convert the numeral to Hindu-Arabic form.

3) LXXI

Write the numeral as a Mayan numeral.

4) 3048

Convert the numeral to a numeral in base 10.

5) 322_7

Convert the base 10 numeral to a numeral in the base indicated.

6) 13,562 to base 8

Add in the indicated base.

7)

$$\begin{array}{r} 333_5 \\ 30_5 \\ \hline \end{array}$$

Subtract in the indicated base.

8)

$$\begin{array}{r} 1001_4 \\ 32_4 \\ \hline \end{array}$$

Multiply in the indicated base.

9)

$$\begin{array}{r} 637 \\ \times 67 \\ \hline \end{array}$$

Decide whether the given set of numbers is a group under the given operation. If not, why?

10) Even integers; multiplication

Decide whether the given set of numbers is a commutative group under the given operation. If not, why?

11) Whole numbers; multiplication

Determine the sum or difference in clock 12 arithmetic.

12) $(8 + 3) + 10$

Decide which of the 5 properties of a commutative group (closure, identity, inverse, associative, commutative) hold for the given system.

13)

\otimes		3	8	14	17
3		8	14	17	3
8		14	17	3	8
14		17	3	8	14
17		3	17	14	8

Solve the problem.

14) If February is your starting month, what month will it be 5 years and 5 months from February?

Perform the modular arithmetic operation.

15) $41 - 27 \pmod{5}$

Find all replacements (less than the modulus) for the question mark that make the statement true.

16) $3 \cdot 4 \equiv ? \pmod{7}$