Circle all answers and show all work.

1. Write the numeral for 372 in each of the following representations:
   (a) Egyptian (use table on the bottom of page 3)
   (b) Babylonian
   (c) Stick with rings (based on 12)

2. Determine the value of each underlined digit and its place value.
   (a) 42,107,000
   (b) 472,336

3. Which number property shows that the two sides of the equation are equal?
   (a) \( 47 \times (318 + 94) = 47 \times (94 + 318) \)
   (b) \( 298 \times 53 + 298 \times 806 = 298 \times (53 + 806) \)
   (c) \( 291 + 46 + (411 + 322) = 291 + (46 + 411) + 322 \)
   (d) \( 841 + 841(37) + 841(623) = 841 + 841(37 + 623) \)
   (e) \( 482(71 - 45) + 370(285 - 93) = 370(285 - 93) + 482(71 - 45) \)

4. Express the year of your birth using Roman numerals.

\[
\frac{\text{Year of your birth (Hindu-Arabic)}}{= \frac{\text{Year of your birth (Roman)}}}
\]
5. Evaluate the following expressions:

(a) $15 + 20 ÷ 5$

(b) $210 - 5 \times 30$

(c) $140 + 16 \times 7 - 40 ÷ 8$

6. Consider the following statements for the set of whole numbers. Illustrate the true or false nature of the statement by an appropriate example.

(a) The non-zero whole numbers are closed for division

(b) If the differences involved are whole numbers, multiplication is distributive over subtraction.

(c) The whole numbers are closed for multiplication.

(d) If the differences involved are whole numbers, subtraction is associative.

(e) Addition is commutative.

7. Show how to use the number line model to represent

(a) $6 + 2$

(b) $6 - 2$
8. (a) Write the names for the following:
   
   (i) 4040
   
   (ii) 62,340,001,000,100

(b) Write these numbers in figures
   
   (i) 119 million, 1 thousand, 7
   
   (ii) 32 billion, 601 million, 16 thousand

9. Round each underlined figure of the following to the nearest:
   
   (a) (Million) During the year 1957, 89,563,974 tons of coal were consumed.
   
   (b) (Billion) The President asked Congress for $4,946,800,800 for foreign aid.
   
   (c) (Hundreds) There were 472 cars in the parking lot.
   
   (d) (Thousands) The major league baseball attendance record is 3,263,728 fans a season.

10. Write these numbers as Hindu-Arabic numerals:
    
    (a) 2 hundreds, 8 tens, 9 ones
    
    (b) 32 tens, 19 ones

<table>
<thead>
<tr>
<th>Stick</th>
<th>Heel Bone</th>
<th>Coiled Rope</th>
<th>Lotus Flower</th>
<th>Bent Reed</th>
<th>Burbot Fish</th>
<th>Astonished Man</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>10</td>
<td>100</td>
<td>1000</td>
<td>10000</td>
<td>100000</td>
<td>10000000</td>
</tr>
</tbody>
</table>

Egyptian Numeral Hieroglyphs
Consider the following number system. It consists of a set of four (4) numerals - diamond, club, spade and heart, and an operation called “play” (signified by an “x” inside of a circle. An operation table is pictured. For example,

\[
\begin{array}{c|c|c|c|c|}
\text{diamond play diamond} & = & \text{diamond} \\
\text{club play heart} & = & \text{heart}
\end{array}
\]

etc.

Does the set \{ diamond, club, heart, spade\} with the operation play, possess the following properties?

(Justify your answers)

(a) closure property

(b) commutative property

(c) associative property

(d) identity property

(e) inverse property