Roman Numerals *(continued)*

Here is a table showing Roman numerals and their Indo-Arabic equivalents. Complete the table by filling in the blank squares.

Roman Numerals and Their Indo-Arabic Equivalents									
1	I	11	XI	10	X	100	C	1000	M
2	II	12		20		200	CC	2000	MM
3		13	XIII	30	XXX	300		3000	
4	IV	14		40	XL	400	CD	4000	$\overline{MV}$
5	V	15	XV	50		500		5000	$\overline{V}$
6		16	XVI	60	LX	600	DC	6000	$\overline{VI}$
7	VII	17		70	LXX	700		7000	$\overline{VII}$
8	VIII	18	XVIII	80	LXXX	800	DCCC	8000	$\overline{VIII}$
9	IX	19	XIX	90	XC	900		9000	

Now that you are familiar with the way Roman numerals are written, try using them to do simple calculations. Add the following numbers together. Write the sum in Roman numerals.

1. CXXI + CXII =

2. XVI + VII =

3. CXII + XII =

4. XIV + VII =

5. XCVI + XIV =

If you found these numbers hard to add, you're not alone. A lot of people find it easiest to change the Roman numerals into Indo-Arabic ones, add them up, then change the sum back into Roman numerals. The Roman numeral system worked well for writing numbers down, but the numerals were hard to work with. That's probably why the Indo-Arabic system was adopted so quickly. It was much, much easier to use.

Even so, Roman numerals still have their uses. Can you think of any places where you might see Roman numerals? List as many of them as you can.

_____   _____

_____   _____

_____   _____

_____   _____

Roman Numerals

The number system we use today was first developed in India. Traders from Arabia saw how useful the system could be, and brought it back to the Mediterranean area. Finally, Europeans learned of the system from Muslims in Spain. Soon Europeans were using this system, too. Because these numbers came from India through Arabia, we call them **Indo-Arabic numbers**.

But what kind of numbers did people in Europe use before Indo-Arabic numbers were introduced? They used **Roman numerals**. The Roman numeral system was developed around 500 B.C. It was based on an earlier Greek system. Roman numerals use seven letters to stand for certain values:

I = 1	C = 100
V = 5	D = 500
X = 10	M = 1000
L = 50	

To show other values, the letter symbols were combined. Both addition and subtraction were used in combining symbols. If the same symbol was repeated two or three times, the values were added:

$$III = I + I + I \quad (= 1 + 1 + 1 = 3)$$
$$XX = X + X \quad (= 10 + 10 = 20)$$

If two different symbols were combined with the larger value on the left and the smaller one on the right, the values were **added**:

$$XV = X + V \quad (= 10 + 5 = 15)$$
$$XVI = X + V + I \quad (= 10 + 5 + 1 = 16)$$

If two different symbols were combined with the smaller value on the left and the larger one on the right, then the smaller value was seen as a negative. It was **subtracted** from the larger one:

$$IV = -I + V = V - I \quad (= 5 - 1 = 4)$$
$$IX = -I + X = X - I \quad (= 10 - 1 = 9)$$

The Roman system only included symbols for numbers up to 1000. If people wanted to write a larger number, they used a bar over the symbol. The bar meant "multiply by 1000."

$$\overline{V} = 5 \, (1000) = 5000$$
$$\overline{X} = 10 \, (1000) = 10,000$$
$$\overline{D} = 500 \, (1000) = 500,000$$
$$\overline{M} = 1000 \, (1000) = 1,000,000$$

(continued)