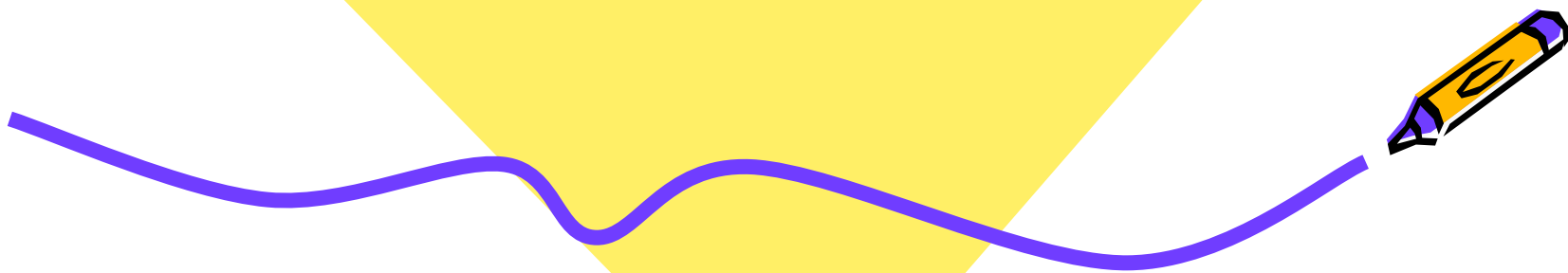




# Roman Numerals



# Roman Numerals Past and Present



- Romans used them for trading and commerce.
- When Romans learned to write they needed a way to write their numbers.
- Roman Numerals are still used today in many different ways.



# Roman vs. Arabic Numerals

- Arabic Numerals are the numbers that we use today.
  - 1, 2, 3, 4, 5, 6, 7, 8, 9, 0
- Roman Numerals are used today, but not in everyday writing.
  - I, V, X, L, C, D, M
- Roman Numerals don't have a symbol for zero.



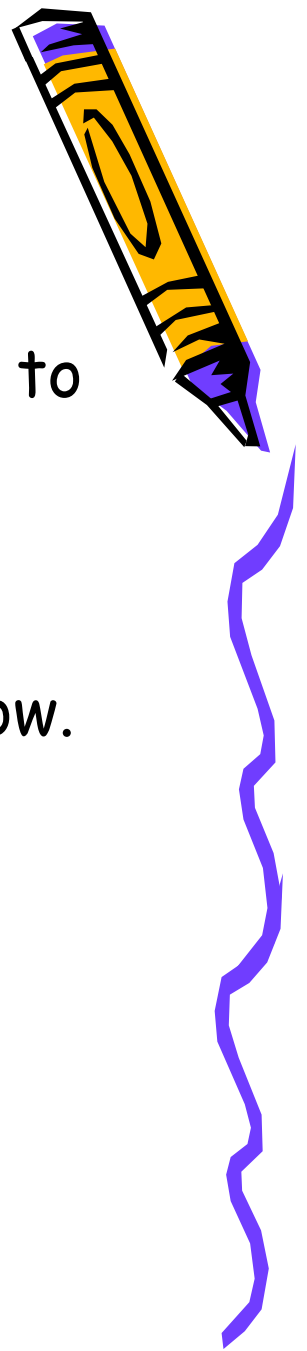
# The Basics



- I - stands for one
- V - stands for five
- X - stands for ten
- L - stands for fifty
- C - stands for one hundred
- D - stands for five hundred
- M - stands for one thousand



# The Rules for Writing Roman Numerals



- The letters should be arranged from largest to smallest.
  - 1510 is written MDX, largest to smallest
- Only powers of ten can be repeated. Don't repeat a letter more than three times in a row.
  - 100 is written LL, not XXXXXXXXXXXX (too many repeats)



# Rules Continued

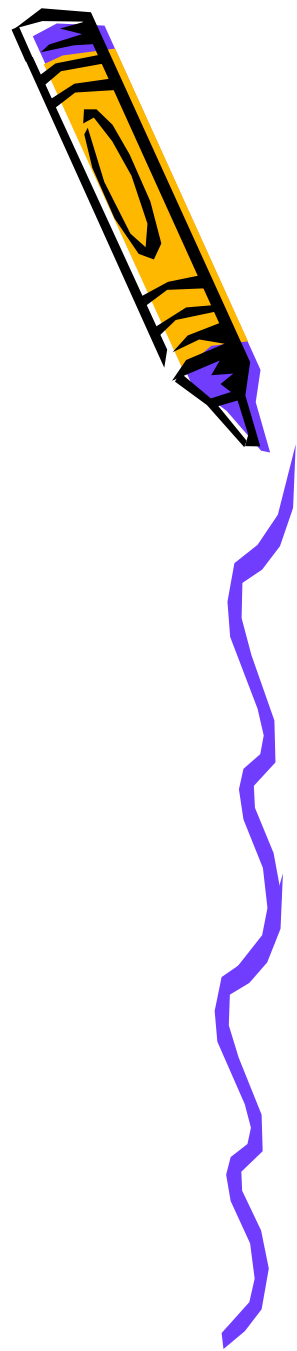


- Numbers can be written using subtraction. A letter with a smaller value precedes one of the larger value. The smaller number is then subtracted from the larger number.
  - Only powers for ten (I, X, C, M) can be subtracted.
  - The smaller letter must be  $\frac{1}{5}$  or  $\frac{1}{10}$  the larger one.
  - The smaller letter must be either the first letter or preceded by a letter at least ten times greater than it.
  - $CCXLIII = 100 + 100 + (50 - 10) + 1 + 1 + 1 = 243$



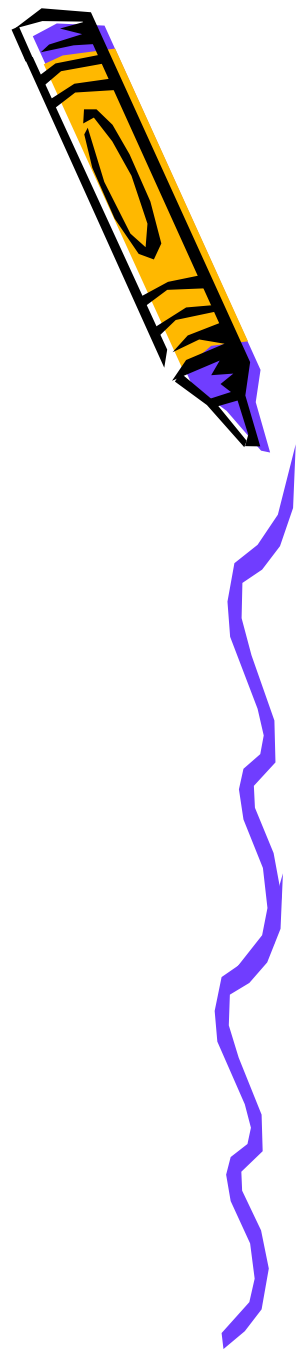
# Practice

- $515 = ?$
- $1005 = ?$
- $32 = ?$
- $9 = ?$



# Answers

- $515 = DXV$
- $1005 = MV$
- $32 = XXXII$ 
  - $9 = IX$



# Adding Roman Numerals



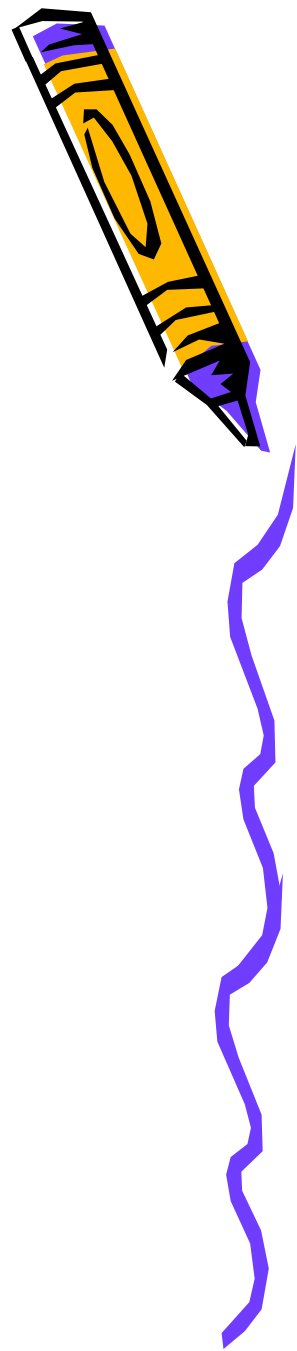
- Write down the two numbers you are adding right next to each other
- Rearrange the letters so they start with the largest and end with the smallest.
- Then start combining similar letters.
- Check you answer by adding the Arabic numbers.



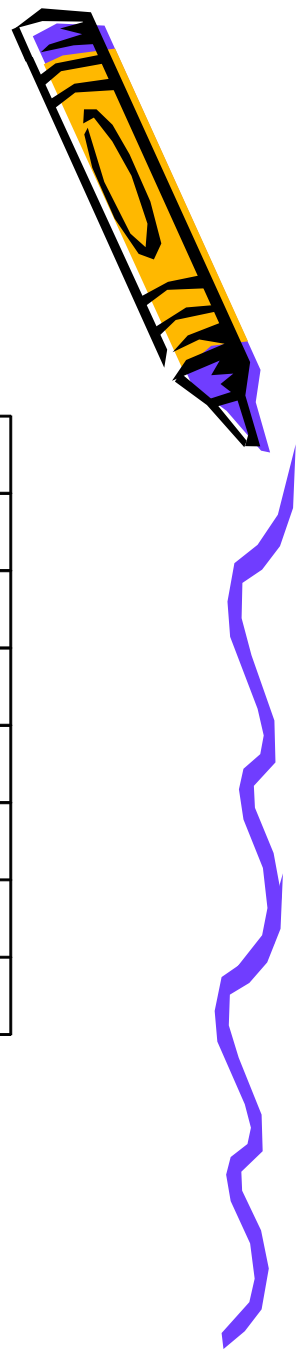
# Now Let's Try Adding

## Problem

1.  $23 + 58$



# Answer to the Adding Problem



- Step 1.  $23 + 58$   
Step 2. XXIII + LVIII  
Step 3. XXIIIILVIII  
Step 4. LXXVIIIIII  
Step 4. IIIIII = VI  
Step 5. LXXVVI  
Step 6. VV = X  
Step 7. LXXXI = 81  
Step 8.  $23 + 58 = 81$

Roman Numeral	Number
I	1
V	5
X	10
L	50
C	100
D	500
M	1000



# Roman Numerals

Now you know the basics of Roman Numerals. You should be able to do simple problems that include Roman Numerals.

