

ROMAN NUMERALS Ancient Additive System

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

Rules

- ① No more than 3 consecutive symbols

EX 4 ~~IIII~~ → not OK
3 III → OK

- ② When a symbol of lesser value appears to the LEFT of a symbol, this requires subtraction.

EX IX = 10 - 1 = 9
CM = 1000 - 100 = 900
IV = 5 - 1 = 4

- ③ When a symbol of lesser value appears to the RIGHT of a symbol, this requires addition.

EX XI = 10 + 1 = 11
MC = 1000 + 100 = 1100

- ④ When writing a base-ten numeral in Roman Numerals, work from left to right by place-holders.

EX A) $\begin{array}{r} 257 \\ \hline 200 : CC \\ 50 : L \\ 7 : VII \end{array}$ CCLVII

B) 15

→

~~VXV~~

10: X

XV

5: V

C) 98

→

~~LXC~~

XCVIII

90: XC

~~LXXXX~~

8: VIII

D) 942

900: CM

CMXLII

40: XL

2: II

E) 1999

~~IMM~~

1000: M

MCMXCIX

900: CM

90: XC

9: IX

- ⑤ When translating a Roman Numeral into base-ten look for subtraction pairs first (left to right). Then you add up from Left to Right.

EX A) L X X V I
 | | | | \
 50 + 10 + 10 + 5 + 1 = 76

B) C C (X L) (I X)
 | | | |
 100 + 100 + 40 + 9 = 249

C) M (C M) (X L) (I V)
 | | | |
 1000 + 900 + 40 + 4 = 1944

D) D C C C L X X X V I I I
 500 + 100 + 100 + 100 + 50 + 10 + 10 + 10 + 5 + 1 + 1 + 1
 = 888