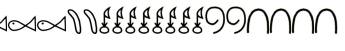
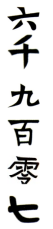
MATH 102
SPRING 2012
EXAM 1

NAME:

1. [10 pts. each] Convert each to Hindu-Arabic.
   (a) 
   (b) MMCDLXXVIII
   (c) $\overline{\text{CCCV}}$DCXLIV
   (d) $\tau\varrho\beta$
   (e) $\iota\omega\iota\delta\sigma\lambda\epsilon$
   (f) 
   (g) 
   (h) 
   (i) 
   (j) 
   (k) 

2. [10 pts. each] Convert each number to the indicated numeration system.
   (a) 304,050 into Egyptian
   (b) 2,342 into Roman
   (c) 80,499 into Roman
   (d) 395 into Greek
   (e) 76,924 into Greek
   (f) 684 into Chinese
   (g) 8,305 into Chinese
   (h) 548 into Babylonian
   (i) 9,108 into Babylonian
   (j) 238 into Mayan
   (k) 2,012 into Mayan

3. [10 pts. each] Convert each to base-10.
   (a) 325_6
   (b) 1001100110_2
   (c) $7B20_{12}$

4. [10 pts. each] Convert each to the base indicated.
   (a) 295 to base-5
   (b) 320 to base-3
   (c) 5887 to base-16

5. [10 pts. each] Perform each calculation in the base indicated.
   (a) $405_6 + 542_6$
   (b) $4BF3_{16} + 8D29_{16}$
   (c) $4032_{12} - 952_{12}$
   (d) $473_8 \times 72_8$
   (e) $51B_{16} \times 1A_{16}$

6. [10 pts. each] Perform the long division in the base indicated, showing all work.
   (a) $2101_5 \div 22_5$
   (b) $403_7 \div 6_7$