Math 215 Name _____
Homework Date _____

1. From the set of digits provided below, create, if possible, a 5 digit number (with 5 different numbers) that meet the criteria stated. (If something is impossible, explain why.)

   Digits to choose from: 0 1 3 6 7 8

   a) divisible by 5

   b) divisible by 4

   c) divisible by 4 and by 8

   d) divisible by 4 but not by 8

   e) divisible by 3

   f) divisible by 3 but not by 2

   g) divisible by 8 and by 5

2. Suppose $b = 3^5 \cdot 5^{12} \cdot 17^4$

   a) is b a composite number?

   b) is b a multiple of 75?

   b) is 25 a multiple of b?

   c) is b even?

d) does 7 go into b with no remainder?

e) is b a multiple of 6?

f) is 5^{12} even?

3. Suppose $m = 2^7 \cdot 11^5 \cdot p^3$, where p is a prime number that is larger than 11. Indicate whether each statement is true or false:

a) p is a factor of m

b) $2m$ is a factor of p

c) 22 is a multiple of m

d) 121 is a factor of m

e) $11p$ goes into m with no remainder

f) m is a multiple of $8p$

g) p ends with a zero (in the ones place)

h) m ends with a zero (in the ones place)

i) p is odd

j) m is odd

k) m is divisible by 3

l) m is divisible by 14

m) 12 is a factor of m

n) $121p^2$ is a factor of m