Math 300 **Fall 2024**

Lab Assignment #2

This lab is due at 12:30 PM on Wednesday, 9/4 and is worth 10 points. This part may be done individually, or in a group of 2, 3, or 4 people.

1) Test each number for divisibility by 2, 3, and 6.
No calculator. Explain your reasoning for each answer.

a) 126,236

b) 2,879,352

c) 4,248,421

d) 153,950

For problems 2 and 3, calculator is allowed, but show all your work.

2a)
Fact: 837 * 1899 = 1,589,463
Fact: 837 * 2936 = 2,457,432
So, both 2457432 and 1589463 are divisible by 837.

So, that means the sum and difference of these 2 big numbers are also both divisible by 837.

Without using division, verify these 2 facts. Use the definition of divisibility, and some addition, subtraction, and multiplication only.

2b)
Fact: 1092 * 577 = 630,084
Fact: 1092 * 1995 = 2,178,540
So, both 630,084 and 2,178,540 are divisible by 1092.

So, that means the sum and difference of these 2 big numbers are also both divisible by 1092.

Without using division, verify these 2 facts. Use the definition of divisibility, and some addition, subtraction, and multiplication only.

3a) Fact: 638 * 1072 = 683,936
So, that big number is divisible by both 638 and 1072.

So, that means that 12 times that big number is also divisible by both 638 and 1072. Without using division, verify these 2 facts. Use the definition of divisibility, and some addition, subtraction, and multiplication only.

3b) Fact: 67 * 2839 = 190,213
So, that big number is divisible by both 67 and 2839.

So, that means that 93 times that big number is also divisible by both 67 and 2839. Without using division, verify these 2 facts. Use the definition of divisibility, and some addition, subtraction, and multiplication only.