1. (4 pts.) Test each number for divisibility by 2, 3, 4, 5, 6, 8, 9, 10 and 11. Do not use a calculator.

(a) 2948
- Even so div by 2
- Sum of digits is 23 so not div by 3 or 9 or 6
- 4148 so div by 4
- 848 so not div by 8
- Not div by 5 or 10
- 2+4+(9+8) = 19 so div by 11

(b) 2655
- Div by 5
- Not div by 2, 4, 8, 10 so not div by 6
- Sum of digits is 13 so div by 3 and 9
- 7-11 not div by 11 so it is not div by 11

2. (3 pts.) Find the prime factorization of the number $24^3 \cdot 49^2$.

$$24^3 \cdot 49^2 = (2 \cdot 2 \cdot 2 \cdot 3)^3 \cdot (7 \cdot 7)^2 = 2^9 \cdot 3^3 \cdot 7^4$$

3. (3 pts.) Find the GCD and LCM of the numbers 130 and 350.

$$\begin{array}{c}
\text{GCD}(130, 350) = 10 \\
\text{LCM}(130, 350) = 2 \cdot 5 \cdot 7 \cdot 13 = 4550
\end{array}$$