

Math 1303 - Math in the Liberal Arts

Quiz #11 - 2014.10.20

Solutions

1. Construct a prime factorization tree for the numbers 600 and 1260.

Note: The structure of the tree may be different, but the final leaves will be the same.



2. Based on problem 1, express 600 and 1260 in terms of their prime factorization.

From the prime factorizations above, $1260 = 2^2 \cdot 3^2 \cdot 5 \cdot 7$ and $600 = 2^3 \cdot 3 \cdot 5^2$.

3. Use your prime factorization from problems 1 and 2 to compute the GCD of 600 and 1260.

We take the common factors to the highest shared power from both, this gives $\text{GCD} = 2^2 \cdot 3 \cdot 5 = 60$.

4. Use your prime factorization from problems 1 and 2 to compute the LCM of 600 and 1260.

We take the highest powers from either one here, which gives $\text{LCM} = 2^3 \cdot 3^2 \cdot 5^2 \cdot 7 = 12600$.