

Name _____

Date _____



LEAST COMMON MULTIPLE SHEET 1B

For each problem below, write out the **prime factorization** of each number to find the LCM. Then follow the instructions below:

- Write out all the common factors in a list in order of factor using exponential form.
- If there are no common factors, then just multiply the two sets of prime factors together (this is the same as multiplying the two numbers together).
- If there are any common factors, then cancel out any that are repeated at the same or at a lower exponent.
- Finally multiply the remaining prime factors to find the LCM.

Example: Find the least common multiple of 20 and 30.

Prime Factorization of 20: $2 \times 2 \times 5 = 2^2 \times 5$

Prime Factorization of 15: $2 \times 3 \times 5$.

- Our list of common prime factors in order is: $2^2, 2, 3, 5, 5$.
- Cancel the '2' as it is a lower exponent than the '2²', and cancel the '5's as it is repeated.
- We multiply these to find the lcm: $2^2 \times 3 \times 5 = 60$

1) Find the least common multiple of 10 and 6.

Prime Factorization of 10: ___ x ___ Prime Factorization of 6: ___ x ___

List of prime factors: ____, ____, ____, ____. Canceling out gives us: ____, ____, ___

The least common multiple is ___ x ___ x ___ = _____

2) Find the least common multiple of 8 and 6.

Prime Factorization of 8: ___ x ___ x ___ Prime Factorization of 6: ___ x ___

List of prime factors: _____. Canceling out gives us: _____

The least common multiple is _____



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LEAST COMMON MULTIPLE SHEET 1B ANSWERS

1) Find the least common multiple of 10 and 6.

Prime Factorization of 10: $\underline{2} \times \underline{5}$

Prime Factorization of 6: $\underline{2} \times \underline{3}$

List of prime factors: $\underline{2}, \underline{2}, \underline{3}, \underline{5}$.

Canceling out gives us: $\underline{2}, \underline{3}, \underline{5}$

The least common multiple is $\underline{2} \times \underline{3} \times \underline{5} = \underline{30}$

2) Find the least common multiple of 8 and 6.

Prime Factorization of 8: $\underline{2} \times \underline{2} \times \underline{2} = \underline{2^3}$ Prime Factorization of 6: $\underline{2} \times \underline{3}$

List of prime factors: $\underline{2^3}, \underline{2}, \underline{3}$ Canceling out gives us: $\underline{2^3}, \underline{3}$

The least common multiple is $\underline{2^3} \times \underline{3} = \underline{24}$