Worksheet

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Problem quickname: 3333

<u>1)</u>

Determine the lcm, the least common multiple, of the two numbers. Find the prime factorizations as in the example and derive the lcm.

a) Determine the lcm of 4 and 29. The lcm of 4 and 29 is $116 = 2^2 \cdot 29$.

The prime factorizations are: $4 = 2^2$, $29 = 29^1$.

Determination of the list of all occurring prime factors:$\{2,29\}$

First number	4	$=$	2^2	$\cdot$	29^0
Second number	29	$=$	2^0	$\cdot$	29^1
Prime factor exponent			$2 > 0$		$1 > 0$
lcm	116	$=$	2^2	$\cdot$	29^1

b) Determine the lcm of 4 and 112.

c) Determine the lcm of 5 and 51.

d) Determine the lcm of 24 and 38.

e) Determine the lcm of 20 and 25.

f) Determine the lcm of 8 and 416.

g) Determine the lcm of 9 and 111.

h) Determine the lcm of 2 and 69.

<u>2)</u>

Determine the lcm, the least common multiple, of the two numbers. Find the prime factorizations as in the example and derive the lcm.

a) Determine the lcm of 7 and 10. The lcm of 7 and 10 is $70 = 2 \cdot 5 \cdot 7$.

The prime factorizations are: $7 = 7^1$, $10 = 2^1 \cdot 5^1$.

Determination of the list of all occurring prime factors:$\{2,5,7\}$

First number	7	$=$	2^0	$\cdot$	5^0	$\cdot$	7^1
Second number	10	$=$	2^1	$\cdot$	5^1	$\cdot$	7^0
Prime factor exponent			$1 > 0$		$1 > 0$		$1 > 0$
lcm	70	$=$	2^1	$\cdot$	5^1	$\cdot$	7^1

b) Determine the lcm of 6 and 11.

c) Determine the lcm of 6 and 13.

d) Determine the lcm of 6 and 28.

e) Determine the lcm of 9 and 27.

f) Determine the lcm of 2 and 36.

g) Determine the lcm of 3 and 27.

h) Determine the lcm of 5 and 14.

3)

Determine the lcm, the least common multiple, of the two numbers. Find the prime factorizations and derive the lcm.

a) Determine the lcm of 3 and 142.

b) Determine the lcm of 6 and 188.

c) Determine the lcm of 2 and 524.

d) Determine the lcm of 18 and 243.

e) Determine the lcm of 9 and 213.

f) Determine the lcm of 9 and 138.

g) Determine the lcm of 23 and 28.

h) Determine the lcm of 12 and 86.

4)

Determine the lcm, the least common multiple, of the two numbers. Find the prime factorizations as in the example and derive the lcm.

a) Determine the lcm of 2 and 203. The lcm of 2 and 203 is $406 = 2 \cdot 7 \cdot 29$.

The prime factorizations are: $2 = 2^1$, $203 = 7^1 \cdot 29^1$.

Determination of the list of all occurring prime factors:$\{2,7,29\}$

First number	2	$=$	2^1	$\cdot$	7^0	$\cdot$	29^0
Second number	203	$=$	2^0	$\cdot$	7^1	$\cdot$	29^1
Prime factor exponent			$1 > 0$		$1 > 0$		$1 > 0$
lcm	406	$=$	2^1	$\cdot$	7^1	$\cdot$	29^1

b) Determine the lcm of 4 and 73.

c) Determine the lcm of 13 and 20.

d) Determine the lcm of 7 and 343.

e) Determine the lcm of 5 and 36.

f) Determine the lcm of 26 and 169.

g) Determine the lcm of 2 and 117.

h) Determine the lcm of 2 and 95.

Good Luck!