TASK

List all the factors of 1944.

You may leave your answers as a product of primes

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Find the prime factor decomposition of the following numbers, and identify how many factors they have.

You DO NOT have to list all the factors if you can explain how you answered the question without doing so.

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64		
120		
150		
1000		
4000		
159000		

List all the factors of 1944.

You may leave your answers as a product of primes

1	$2^3 \times 3^5 = 1944$
2	$2^2 \times 3^5 = 972$
$2^2 = 4$	$2 \times 3^5 = 486$
$2^3 = 8$	$3^5 = 243$
3	$2^3 \times 3^4 = 648$
$3^2 = 9$	$2^3 \times 3^3 = 216$
$3^3 = 27$	$2^3 \times 3^2 = 72$
$3^4 = 81$	$2^3 \times 3 = 24$
$2 \times 3 = 6$	$2^2 \times 3^4 = 324$
$2^2 \times 3 = 12$	$2 \times 3^4 = 162$
$2^2 \times 3^2 = 36$	$2 \times 3^3 = 54$
$2^2 \times 3^3 = 108$	$2 \times 3^2 = 18$

Find the prime factor decomposition of the following numbers, and identify how many factors they have.

You DO NOT have to list all the factors if you can explain how you answered the question without doing so.

8	2^3	4
9	3^2	3
10	2×5	4
11	11	2
12	$2^2 \times 3$	6
13	13	2
14	2×7	4
15	3×5	4
16	2^4	5
17	17	2
18	2×3^2	6
19	19	2
20	$2^2 \times 5$	6
30	$2 \times 3 \times 5$	8
32	2^5	6
48	$2^4 \times 3$	10
64	2^6	7
120	$2^3 \times 3 \times 5$	16
150	$2 \times 3 \times 5^2$	12
1000	$2^3 \times 5^3$	16
4000	$2^5 \times 5^3$	24
159000	$2^3 \times 3 \times 5^3 \times 53$	64