

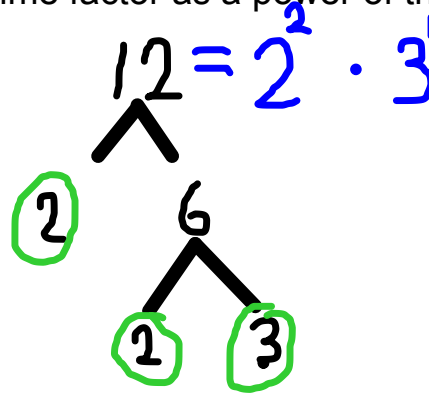
"Prime Factorization" is finding the original number.

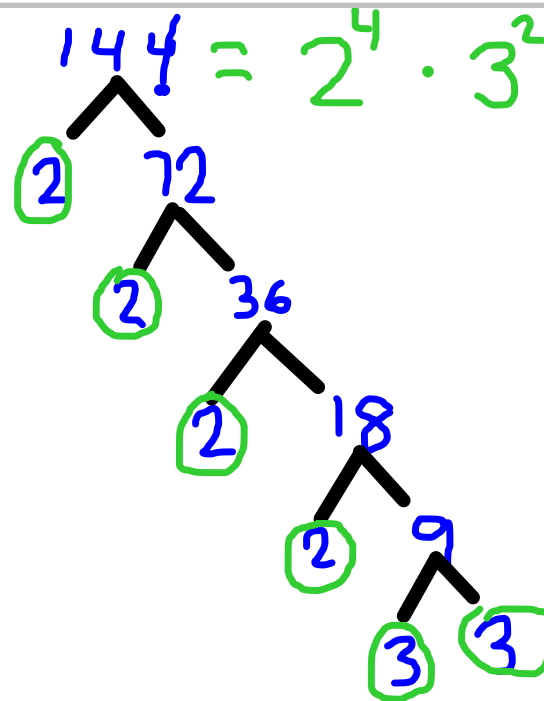
which prime numbers

you need to multiply together to get

Use Factor Trees as follows:

1. start with the number itself at the top center of the tree.
2. factor out the smallest prime starting with 2, 3, 5, 7, 11, 13, 17 and so on.
3. always circle your primes and put the other factor on the other branch of the tree.
4. if that branch factor is prime, circle it and you are done; but if the other factor is not prime, make another branch and find the next smallest prime and repeat 3 and 4.
5. when you are complete, list each prime factor as a power of the number of times that prime was circled.





Try as many of the 21 prime factorizations as possible on the worksheet I handed out in class.

The prime factorizations of the first 100 numbers is on the next page.

Prime factorization of the first 100 integers

1 = 1	2 = 2 ¹	3 = 3 ¹	4 = 2 ²	5 = 5 ¹
6 = 2 ¹ 3 ¹	7 = 7 ¹	8 = 2 ³	9 = 3 ²	10 = 2 ¹ 5 ¹
11 = 11 ¹	12 = 2 ² 3 ¹	13 = 13 ¹	14 = 2 ¹ 7 ¹	15 = 3 ¹ 5 ¹
16 = 2 ⁴	17 = 17 ¹	18 = 2 ¹ 3 ²	19 = 19 ¹	20 = 2 ² 5 ¹
21 = 3 ¹ 7 ¹	22 = 2 ¹ 11 ¹	23 = 23 ¹	24 = 2 ³ 3 ¹	25 = 5 ²
26 = 2 ¹ 13 ¹	27 = 3 ³	28 = 2 ² 7 ¹	29 = 29 ¹	30 = 2 ¹ 3 ¹ 5 ¹
31 = 31 ¹	32 = 2 ⁵	33 = 3 ¹ 11 ¹	34 = 2 ¹ 17 ¹	35 = 5 ¹ 7 ¹
36 = 2 ² 3 ²	37 = 37 ¹	38 = 2 ¹ 19 ¹	39 = 3 ¹ 13 ¹	40 = 2 ³ 5 ¹
41 = 41 ¹	42 = 2 ¹ 3 ¹ 7 ¹	43 = 43 ¹	44 = 2 ² 11 ¹	45 = 3 ² 5 ¹
46 = 2 ¹ 23 ¹	47 = 47 ¹	48 = 2 ⁴ 3 ¹	49 = 7 ²	50 = 2 ¹ 5 ²
51 = 3 ¹ 17 ¹	52 = 2 ² 13 ¹	53 = 53 ¹	54 = 2 ¹ 3 ³	55 = 5 ¹ 11 ¹
56 = 2 ³ 7 ¹	57 = 3 ¹ 19 ¹	58 = 2 ¹ 29 ¹	59 = 59 ¹	60 = 2 ² 3 ¹ 5 ¹
61 = 61 ¹	62 = 2 ¹ 31 ¹	63 = 3 ² 7 ¹	64 = 2 ⁶	65 = 5 ¹ 13 ¹
66 = 2 ¹ 3 ¹ 11 ¹	67 = 67 ¹	68 = 2 ² 17 ¹	69 = 3 ¹ 23 ¹	70 = 2 ¹ 5 ¹ 7 ¹
71 = 71 ¹	72 = 2 ³ 3 ²	73 = 73 ¹	74 = 2 ¹ 37 ¹	75 = 3 ¹ 5 ²
76 = 2 ² 19 ¹	77 = 7 ¹ 11 ¹	78 = 2 ¹ 3 ¹ 13 ¹	79 = 79 ¹	80 = 2 ⁴ 5 ¹
81 = 3 ⁴	82 = 2 ¹ 41 ¹	83 = 83 ¹	84 = 2 ² 3 ¹ 7 ¹	85 = 5 ¹ 17 ¹
86 = 2 ¹ 43 ¹	87 = 3 ¹ 29 ¹	88 = 2 ³ 11 ¹	89 = 89 ¹	90 = 2 ¹ 3 ² 5 ¹
91 = 7 ¹ 13 ¹	92 = 2 ² 23 ¹	93 = 3 ¹ 31 ¹	94 = 2 ¹ 47 ¹	95 = 5 ¹ 19 ¹
96 = 2 ⁵ 3 ¹	97 = 97 ¹	98 = 2 ¹ 7 ²	99 = 3 ² 11 ¹	100 = 2 ² 5 ²