Perfect Numbers

Definition

A Perfect Number is a number that has equal (same numbers) factors.

Factor

- A factor is a number that divides into another with no remainder.

- 2 is a factor of 6 because:
  2 divides into 6 three times with no remainder

- 2 is not a factor of 7 because:
  2 divides into 7 three times with a remainder of one

Examples of perfect numbers

4 = 2x2 25 = 5x5 1= 1x1

64 = 8x8 81 = 9x9 36 = 6x6

The numbers in black are all perfect squares because they have 2 equal factors.

List of Perfect Squares: 1 4 9 16 25 36 49 64 81 100

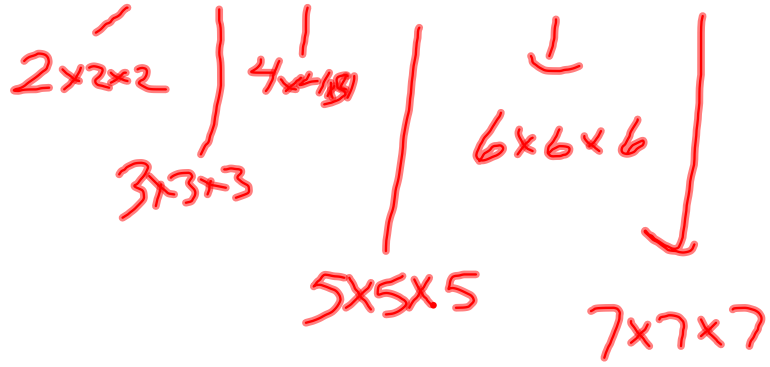
1x1 2x2 3x3 7x7 8x8 9x9 10x10

More Examples of Perfect Numbers

8 = 2x2x2 **1000 = 10x10x10** **125 = 5x5x5**

The numbers in black are perfect cubes because they have 3 equal factors.

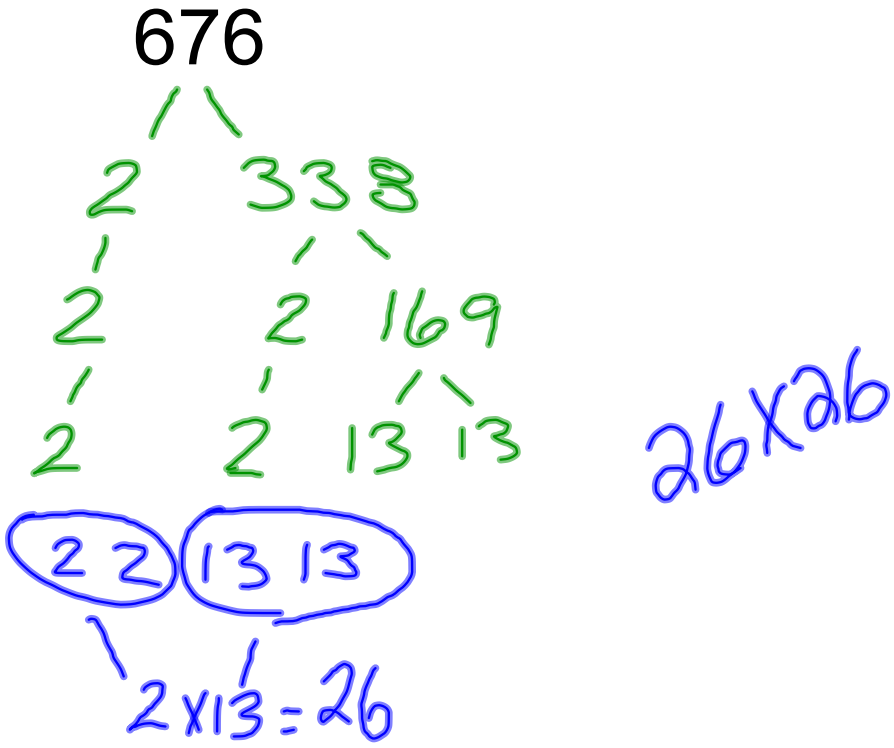
List of Perfect Cubes: 1 8 27 64 125 216 343 ___

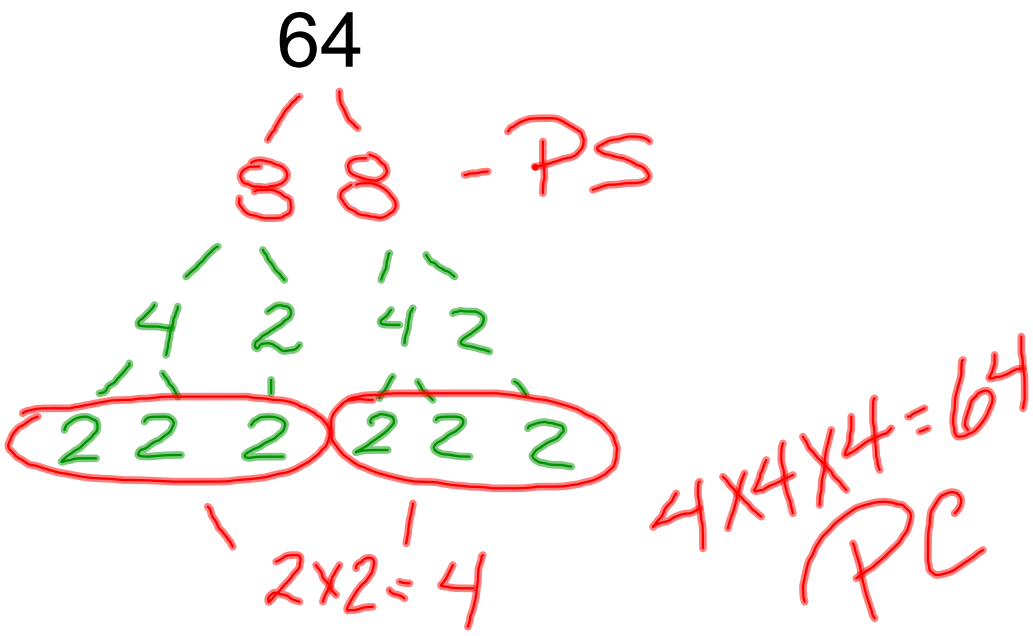


TRY THESE !!!

Three of the following numbers are perfect squares. Two of the following numbers are perfect cubes? Find both of the perfect cubes before you go on.

http://www.youtube.com/watch?v=qkGJ4lINXn4


676
2
338
2
2
169
2
2
13
13
22
1313
2x13=26
26x26


64
8 8
-PS
4 2 4 2
2 2 2 2 2 2
2x2=4
4x4x4=64
PC

Exercises

A

4. Determine the square root of each number. Explain the process used.

a) 196 b) 256 c) 361 d) 289 e) 441

5. Determine the cube root of each number. Explain the process used.

a) 343 b) 512 c) 1000 d) 1331 e) 3375

B

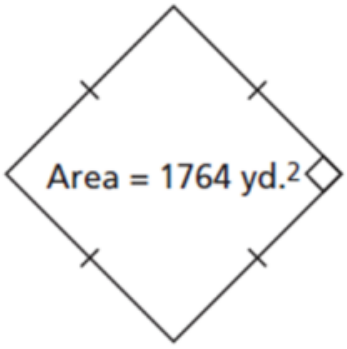
6. Use factoring to determine whether each number is a perfect square, a perfect cube, or neither.

a) 225 b) 729 c) 1944
d) 1444 e) 4096 f) 13 824

7. Determine the side length of each square.

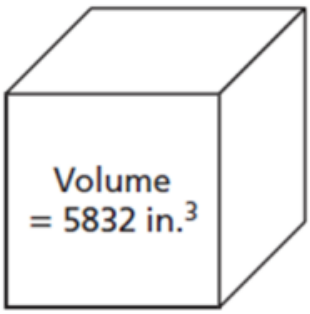
a)

b)

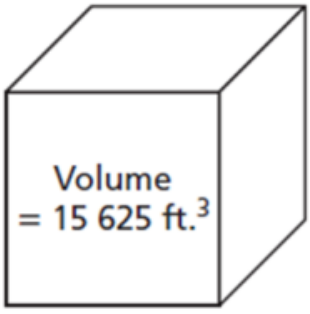


8. Determine the edge length of each cube.

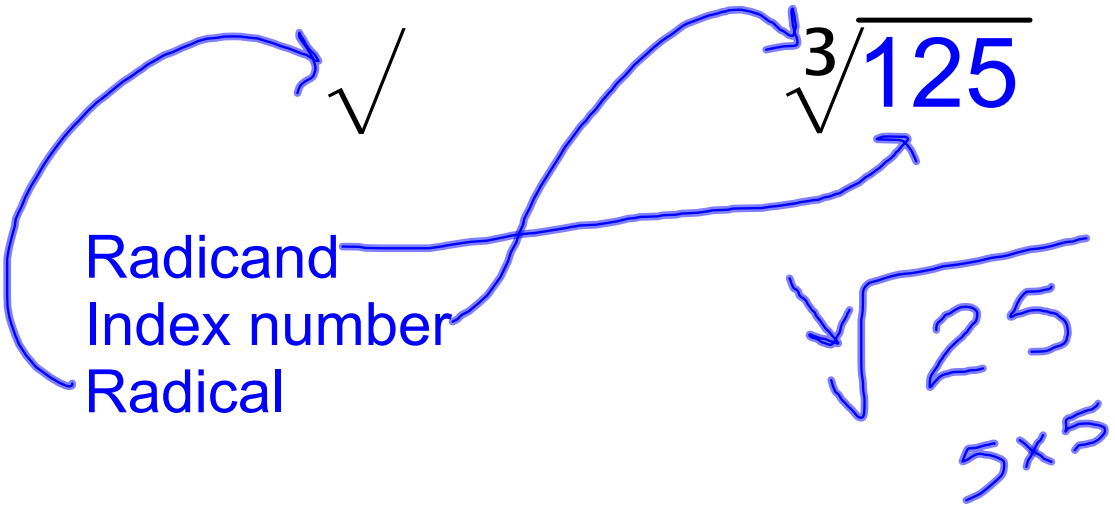
a)

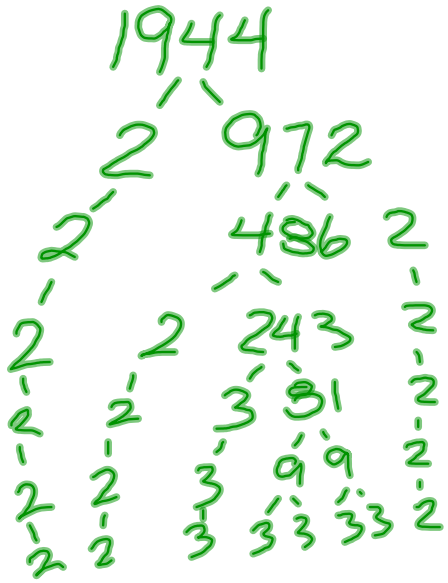


b)



Terms of a Radical




1944
2
972
2
486
2
2
2
243
2
2
2
3
81
2
2
2
3
9
9
2
2
3
3
3
3
2
2