```
2 | 4096
2 | 2048
2 | 1024
2 | 512
2 | 256
2 | 128
2 | 64
2 | 32
2 | 16
2 | 8
2 | 4
2 | 2
    1
```

$= (2)^3 \times (2)^3 \times (2)^3 \times (2)^3 = (16)^3$

(i) cubes of an even number are 216, 8000, 4096.

(ii) cubes of an odd number are 729, 3375, 125, 343, 9261.

7) Find the least number by which 1323 must be multiplied so that the product is a perfect cube.

Ans→ The prime factor of 1323 are $= 3 \times 3 \times 3 \times 7 \times 7$

$= (3 \times 3 \times 3) \times 7 \times 7$

clearly, 1323 must be multiplied by 7.

8) Find the smallest number by which 8768 must be divided so that the quotient is a perfect cube.

Ans→ The prime factor of 8768 are

```
2 | 8768
2 | 4384
2 | 2192
2 | 1096
2 | 548
2 | 274
13 | 137
     1
```

$= 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 137$

$= (2 \times 2 \times 2) \times (2 \times 2 \times 2) \times 137$

clearly, 8768 must be divided by 137.

9) Find the smallest number by which 27783 be multiplied to get a perfect square number.

Ans→

```
3 | 27783
3 |  9261
3 |  3081
3 |  1029
7 |   343
7 |    49
7 |     7
  |     1
```

= (3×3×3)×3 ×(7×7×7)

∴ clearly, 27783 must be multiplied by 3×3 = 9

10) with what least number must 8640 be divided so that the quotient is a perfect cube?

Ans→ The prime factors of 8640 are

```
2 | 8640
2 | 4320
2 | 2160
2 | 540
2 | 270
3 | 135
3 | 45
3 | 15
5 | 5
  | 1
```

= (2×2×2)×(2×2)×(3×3×3)×5

clearly, 8640 must be divided by 5.

11) which is the smallest number that must be multiplied to 77175 to make it a perfect cube?

Ans→ The prime factors of 77175 are

$$
\begin{array}{r|l}
3 & 77175 \\ \hline
3 & 25725 \\ \hline
5 & 8575 \\ \hline
5 & 1715 \\ \hline
7 & 343 \\ \hline
7 & 49 \\ \hline
7 & 7 \\ \hline
 & 1
\end{array}
$$

$= 3 \times 3 \times 5 \times 5 \times (7 \times 7 \times 7)$

clearly, 877175 must be multiplied be $3 \times 5 = 15$