① Finding the prime factorization of 1240 using three different methods.

Division method:

2	1240
2	620
2	310
5	155
	31

Multiplication Method:

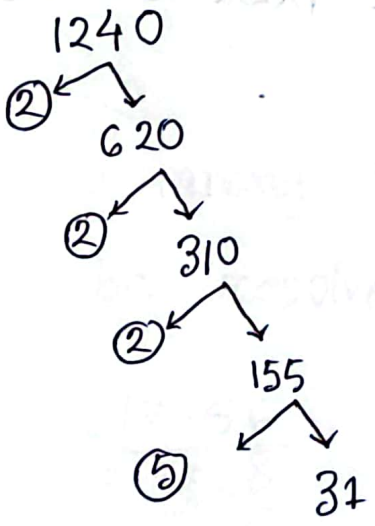
1240

$= 2 \times 620$

$= 2 \times 310 \times 2$

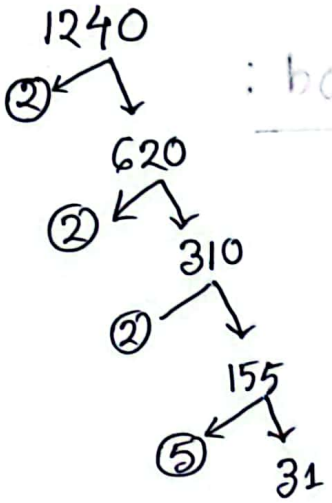
$= 2 \times 2 \times 2 \times 155$

Tree Diagram:



Therefore, the factorization of 1240 is $= 2^3 . 5 . 31$

② Finding all the factors of 1240 using tree diagram



∴ Numbers of totall factors = $(3+1)\times(1+1)\times(1+1)$

$= 4\times2\times2 = 16$

$1240 = 1\times1240$

$= 2\times620$

$= 4\times310$

$= 8\times155$

$= 5\times248$

$= 10\times124$

$= 20\times62$

$= 40\times31$

∴ Total Factors = 1, 2, 4, 5, 8, 10, 20, 40, 31, 62, 124, 248, 155, 310, 620, 1240

③ All the prime factor of 1240.

Prime factors of 1240 are = 2, 5, 31

④ Composite factors of 1240.

All factors of 1240 = 1, 2, 4, 5, 8, 10, 20, 40, 31, 62, 124, 248, 155, 310, 620, 1240

Prime factors of 1240 = 4, 8, 10, 20, 40, 62, 124, 248, 155, 310, 620, 1240

⑤ How many ways can the number 7056 can be resolved in two factors?

Ans:

2	7056
2	3528
2	1764
2	882
3	441
3	147
7	49
	7

Total Factor = $(4+1)\times(2+1)\times(2+1)$

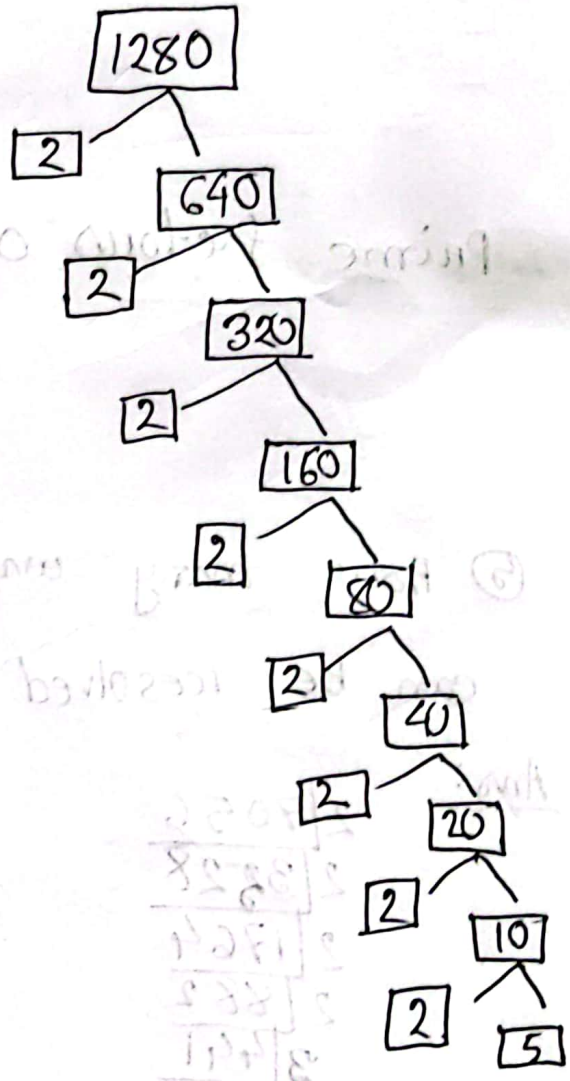
$= 5\times3\times3$

$= 45$

∴ 7056 can be resolved into two

$$\text{factor} = \frac{45+1}{2} = \frac{46}{2} = 23 \quad \text{Ans}$$

⑥ Prime factor of 1280 using tree diagram and the sum of composite factors.



Prime factorization of 1280
$= 2^8 . 5$

Prime factor $= 2, 5$

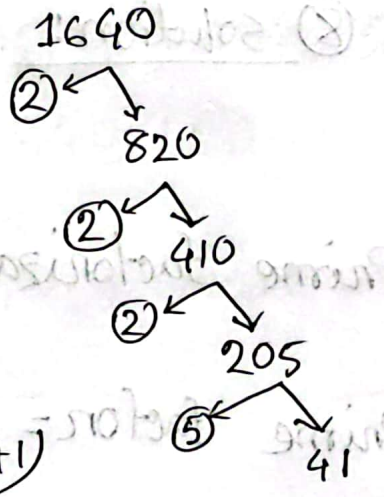
Total factor $= (8+1) \times (1+1)$
$= 9 \times 2$
$= 18$

$1280 = 1 \times 1280$
$= 2 \times 640$
$= 4 \times 320$
$= 5 \times 256$
$= 8 \times 160$
$= 10 \times 128$
$= 20 \times 64$
$= 40 \times 32 = 16 \times 80$

composite factor = 4, 8, 10, 16, 20, 32, 40, 64, 80, 128, 160, 256, 320, 640, 1280

Sum of these composite factors: 4+8+10+16+20+32+40+64+80+128+160+256+320+640+1280 = ~~3058~~ 3058 Ans

⑦ Solution:



Prime factorization = $2^3 \cdot 5 \cdot 41$

∴ Prime factor = 2, 5, 41

Total factor = (3+1)(1+1)(1+1)

= 4 · 2 · 2

= 16

1640 = 1 × 1640

= 2 × 820 = 10 × 164

= ~~2 × 4~~ 5 × 328 = 41 × 40 = 4 × 410 = 8 × 205

composite factor = All factor − 1, prime factor

= 4, 8, 10, 20, 82, 164, 205, 328, 410, 820, 1640, 40

sum of these = 4 + 8 + 10 + 20 + 82 + 164 + 205 + 328 + 410 + 820 + 1640 + 40

= 3731 Ans

⑧ solution:

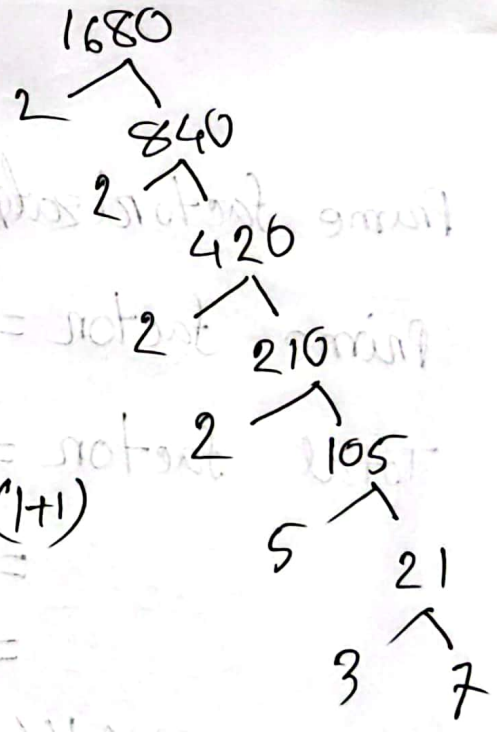
Prime factorization = $2^4 \cdot 3 \cdot 5 \cdot 7$

Prime factor = 2, 3, 5, 7

Total factor = (4+1)(1+1)(1+1)(1+1)

= 5 · 2 · 2 · 2

= 40



$1680 = 1 \times 1680$

$= 2 \times 840$

$= 3 \times 560$

$= 4 \times 420$

$= 5 \times 336$

$= 6 \times 280$

$= 7 \times 240$

$= 8 \times 210$

$= 10 \times 168$

$= 12 \times 140$

$= 14 \times 120$

$= 15 \times 112$

$= 16 \times 105$

$= 20 \times 84$

$= 21 \times 80$

$= 24 \times 70$

$= 28 \times 60$

$= 30 \times 56$

$= 35 \times 48$

$= 40 \times 42$

composite factor

$= 4, 6, 8, 10, 12, 14, 15$

$16, 20, 21, 24, 28,$

$30, 35, 40, 42, 48,$

$56, 60, 70, 80, 84,$

$105, 112, 120, 140,$

$168, 210, 240, 280,$

$336, 420, 560,$

$840, 1680$

sum of These $= 5934$

Ans