

$$n = p_1^{a_1} p_2^{a_2} \dots p_k^{a_k}$$

$$\text{No of FACTORS} (a_1 + 1)(a_2 + 1) \dots (a_k + 1)$$

$$P(n) = n^{\frac{\text{No of FACTORS}}{n}}$$

$$\begin{aligned} \text{SUM OF FACTORS} &= (1 + p_1 + p_1^2 + \dots + p_1^{a_1}) \\ &\quad (1 + p_2 + p_2^2 + \dots + p_2^{a_2}) \\ &\quad \vdots \\ &\quad (1 + p_k + p_k^2 + \dots + p_k^{a_k}) \end{aligned}$$

$$84 = 1, 2, 3, 4, 6, 7, 12, 14, 21, 28, 42, 84$$

$$= 81 \frac{000}{2}$$

$$n^{\frac{3}{2}} = n \times n^{\frac{1}{2}}$$

$$= n \times \sqrt{n}$$

$$81 = 1, 3, 9, 27, 81$$

$$81 \times 81 \times \sqrt{81} = 81^{\frac{5}{2}}$$

$$84 = 2 \times 2 \times 3 \times 7$$

$$= 2^2 \cdot 3^1 \cdot 7^1$$

$$1 \times 2 \times 2$$

$$2 \times 3$$

$$4 \times 3$$

$$7 \times 2 \times 2$$

$$7 \times 3$$

$$\frac{2}{4} > 3$$

$$6$$

$$12$$

$$7$$

$$14$$

$$28$$

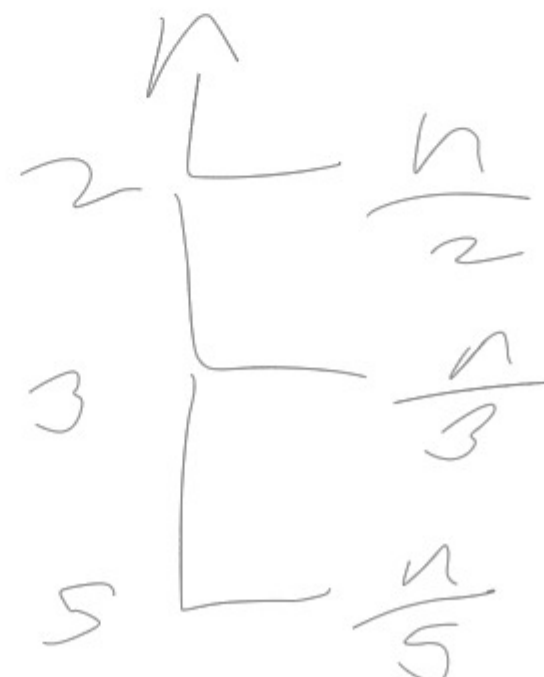
$$(2+1)(1+1)(1+1) + 2$$

$$3 \times 2 \times 2 = 12$$

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 |
| T | T | | | X | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |

$$n(\log(\log n))$$

6



$$\frac{1}{2} = \frac{1}{3} + \frac{1}{4} + \frac{1}{5} + \frac{1}{6} + \frac{1}{7}$$

0.33 0.25 0.2 0.16