SMART EXAM RESOURCES

REVISION NOTES

TOPIC: POWERS AND ROOTS

Sub-topics

- **squares : Squares of numbers from 1 to 15**

Number	Square		Number	Square		Number	Square
1	1		6	36		11	121
2	4		7	49		12	144
3	9		8	64		13	169
4	16		9	81		14	196
5	25		10	100		15	225

- **square roots : Square roots of the 'Squares of the first 15 numbers'**

Number	Square root		Number	Square root		Number	Square root
1	1		216	6		1331	11
4	2		343	7		1728	12
9	3		512	8		2197	13
16	4		729	9		2754	14
25	5		1000	10		3375	15

- **cubes : Cubes of numbers from 1 to 15**

Number	Cube		Number	Cube		Number	Cube
1	1		6	216		11	1331
2	8		7	343		12	1728
3	27		8	512		13	2197
4	64		9	729		14	2744
5	125		10	1000		15	3375

- **cube roots : Cube roots of the 'Cubes of the first 15 numbers'**

Number	Cube root		Number	Cube root		Number	Cube root
1	1		216	6		1331	11
8	2		343	7		1728	12
27	3		512	8		2197	13
64	4		729	9		2744	14
125	5		1000	10		3375	15

Other powers and roots of numbers :

- **squares : Squares of numbers greater than 15**

Number	Square		Number	Square		Number	Square
16	256		21	441		26	676
17	289		22	484		27	729
18	324		23	529		28	784
19	361		24	576		29	841
20	400		25	625		30	900

- **square roots : Square roots of the 'Squares of numbers greater than 15'.**

Square	Square root		Number	Square root		Number	Square root
256	16		441	21		676	26
289	17		484	22		729	27
324	18		529	23		784	28
361	19		576	24		841	29
400	20		625	25		900	30

- **cubes : Cubes of numbers greater than 15**

Number	Cube		Number	Cube		Number	Cube
16	4096		21	9261		26	17576
17	4913		22	10648		27	19683
18	5832		23	12167		28	21952
19	6859		24	13824		29	24389
20	8000		25	15625		30	27000

- **cube roots : Cube roots of the 'Cubes of numbers greater than 15'**

Number	Cube root		Number	Cube root		Number	Cube root
4096	16		9261	21		17576	26
4913	17		10648	22		19683	27
5832	18		12167	23		21952	28
6859	19		13824	24		24389	29
8000	20		15625	25		27000	30

Method to find the square and square root through calculation:

Square:

- 2x2=4 is read as 2 squared is 4 or the square of 2 is 4.
- square means to multiply the given number twice.

Square root

- $\sqrt{4}$ = 2 . This is read as square root of 4 is 2.
- When you have to find the square root of 4, you have to find that number which when multiplied two times by itself will give you 4.
- In this case it is 2.
- This is how you find the square root of any given number.

Cube:

- 2x2x2=8 is read as 2 cube is 8 or the cube of 2 is 8.
- Cube means to multiply the given number thrice.
- $\sqrt[3]{8}$ = 2 . This is read as cube root of 8 is 2.
- When you have to find the cube root of 8, you have to find that number which when multiplied three times by itself will give you 8.
- In this case it is 2.
- This is how you find the cube root of any given number

Special for 2025-2027-Syllabus: [Memory Based Task]
- **Recall of squares and their corresponding roots from 1 to 15, and recall of cubes and their corresponding roots of 1, 2, 3, 4, 5 and 10,**