1. Calculation Tricks

1.1 List of Important Fractions

You get many questions in the exams based on Percentage, Profit, Interest etc. in which you have to calculate, say 87.5 % of 800, 58.33 % of 2400 etc.

Calculating these values with the help of traditional methods is time-consuming. If you apply the fraction approach, you can crack these easily i.e., if you know that 87.5 % is just $7/8^{th}$ of the number and 58.33 % is $7/12^{th}$ of the number, then it becomes easy to calculate.

Given below are the important fractions, which you should remember:

% age	Fraction	% age	Fraction
50 %	$^1/_2$	55 $^5/_9$%	$^5/_9$

$33\,{}^{1}/_{3}\%$	${}^{1}/_{3}$	$77\,{}^{7}/_{9}\%$	${}^{7}/_{9}$
$66\,{}^{2}/_{3}\%$	${}^{2}/_{3}$	$88\,{}^{8}/_{9}\%$	${}^{8}/_{9}$
25 %	${}^{1}/_{4}$		
75 %	${}^{3}/_{4}$	$9\,{}^{1}/_{11}\%$	${}^{1}/_{11}$
20 %	${}^{1}/_{5}$	$18\,{}^{2}/_{11}\%$	${}^{2}/_{11}$
40 %	${}^{2}/_{5}$	$27\,{}^{3}/_{11}\%$	${}^{3}/_{11}$
60 %	${}^{3}/_{5}$	$36\,{}^{4}/_{11}\%$	${}^{4}/_{11}$
80 %	${}^{4}/_{5}$	$45\,{}^{5}/_{11}\%$	${}^{5}/_{11}$
		$54\,{}^{6}/_{11}\%$	${}^{6}/_{11}$
$16\,{}^{2}/_{3}\%$	${}^{1}/_{6}$	$63\,{}^{7}/_{11}\%$	${}^{7}/_{11}$
$83\,{}^{1}/_{3}\%$	${}^{5}/_{6}$	$72\,{}^{8}/_{11}\%$	${}^{8}/_{11}$
$14\,{}^{2}/_{7}\%$	${}^{1}/_{7}$	$81\,{}^{9}/_{11}\%$	${}^{9}/_{11}$

		$90\ ^{10}/_{11}\%$	$^{10}/_{11}$
$12\ ^{1}/_{2}\%$	$^{1}/_{8}$		
$37\ ^{1}/_{2}\%$	$^{3}/_{8}$	$8\ ^{1}/_{3}\%$	$^{1}/_{12}$
$62\ ^{1}/_{2}\%$	$^{5}/_{8}$	$41\ ^{2}/_{3}\%$	$^{5}/_{12}$
$87\ ^{1}/_{2}\%$	$^{7}/_{8}$	$58\ ^{1}/_{3}\%$	$^{7}/_{12}$
		$91\ ^{2}/_{3}\%$	$^{11}/_{12}$
$11\ ^{1}/_{9}\%$	$^{1}/_{9}$	$6\ ^{2}/_{3}\%$	$^{1}/_{15}$
$22\ ^{2}/_{9}\%$	$^{2}/_{9}$	$6\ ^{1}/_{4}\%$	$^{1}/_{16}$
$44\ ^{4}/_{9}\%$	$^{4}/_{9}$	5 %	$^{1}/_{20}$

Anything doubles to increase by 100 % and becomes 200%.
Anything trebles to increase by 200 % and becomes 300 %.

1.2 Important Tables, Squares & Cubes

In order to be good at mathematics, you have to be good at calculations. For improving calculations, you have to be good at numbers

and tables. You should start with tables and make it the most important part of your preparation.

Tables:

Learn all these tables by heart and see how you improve your calculation speed.

Table	12	13	14	15	16	17	18	19
T×1	12	13	14	15	16	17	18	19
T×2	24	26	28	30	32	34	36	38
T×3	36	39	42	45	48	51	54	57
T×4	48	52	56	60	64	68	72	76
T×5	60	65	70	75	80	85	90	95
T×6	72	78	84	90	96	102	108	114
T×7	84	91	98	105	112	119	126	133
T×8	96	104	112	120	128	136	144	152
T×9	108	117	126	135	144	153	162	171

T×10	120	130	140	150	160	170	180	190

Squares: Learn these squares by heart.

Z	Z^2	Z	Z^2	Z	Z^2
1	1	13	169	25	625
2	4	14	196	26	676
3	9	15	225	27	729
4	16	16	256	28	784
5	25	17	289	29	841
6	36	18	324	30	900
7	49	19	361	31	961
8	64	20	400	32	1024
9	81	21	441	33	1089
10	100	22	484	34	1156

11	121	23	529	35	1225
12	144	24	576		

Cubes: Learn these cubes by heart.

Y	Y^3	Y	Y^3
1	1	12	1728
2	8	13	2197
3	27	14	2744
4	64	15	3375
5	125	16	4096
6	216	17	4913
7	343	18	5832
8	512	19	6859
9	729	20	8000
10	1000	21	9261

11	1331	22	10648