MULTIPLICATION TABLE

BASICS OF MULTIPLICATION TABLE

LEVEL: HIGH

PRESENTED BY

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MULTIPLICATION

- BEFORE KNOW ABOUT TABLES WE MUST KNOW LITTLE ABOUT MULTIPLICATION:
- IF I ASK A QUESTION WHICH OF THE FOLLOWING U FACED DIFFICULTY? ADDITION, SUBTRACTION, MULTIPLICATION OR DIVISION

- YES! MOST OF UR ANSWER IS MULTIPLICATION.

- THE WORD MULTIPLY CAME FROM THE LATIN WORD "MULTUS" MEANS MANY PLEX OR MANY FOLD.
- MULTIPLICATION IS NOTHING BUT REPEATED ADDITION.

  FOR EXAMPLE: **5+5+5+5+5= 25** HERE **NO. 5 COMES 5 TIMES** SO WE CAN CALCULATE IT AS **5 X 5 = 25.** THE ANSWER IS SAME , IT MEANS MULTIPLICATION IS JUST THE REPEATED ADDITION.

MULTIPLICATION TABLE

Multiplication Table - 20x20

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
2	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40
3	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60
4	4	8	12	16	20	24	28	32	36	40	44	48	52	56	60	64	68	72	76	80
5	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
6	6	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96	102	108	114	120
7	7	14	21	28	35	42	49	56	63	70	77	84	91	98	105	112	119	126	133	140
8	8	16	24	32	40	48	56	64	72	80	88	96	104	112	120	128	136	144	152	160
9	9	18	27	36	45	54	63	72	81	90	99	108	117	126	135	144	153	162	171	180
10	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200
11	11	22	33	44	55	66	77	88	99	110	121	132	143	154	165	176	187	198	209	220
12	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240
13	13	26	39	52	65	78	91	104	117	130	143	156	169	182	195	208	221	234	247	260
14	14	28	42	56	70	84	98	112	126	140	154	168	182	196	210	224	238	252	266	280
15	15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270	285	300
16	16	32	48	64	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304	320
17	17	34	51	68	85	102	119	136	153	170	187	204	221	238	255	272	289	306	323	340
18	18	36	54	72	90	108	126	144	162	180	198	216	234	252	270	288	306	324	342	360
19	19	38	57	76	95	114	133	152	171	190	209	228	247	266	285	304	323	342	361	380
20	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	380	400

- EVERY ONE WANTS TO LEARN TABLES AND RETAIN IT IN HIS MEMORY TO QUICKLY SOLVE MULTIPLICATION PROBLEMS.

- LOTS OF VIDEOS AVAILBLE ON INTERNET SHOWING EASY AND QUICK TRICKS USING THEM WE CAN LEARN AND WRITE TABLES EASILY.

- BUT THE ? IS HOW THESE TABLES PREPARED? WE KNOW THAT EVERY CONSTRUCTION HAS ITS BASE SO THE MULTIPLICATION TABLE IS… BUT WHAT IS THE BASIS OF THESE TABLES?

CAN U ANSWER? THINK!!!!!!

BASIS OF MULTIPLICATION TABLES

- THE ANSWER ISSSSSSSSSSSSSS   10 TADAN 🔔

1	2	3	4	5	6	7	8	9	10	11	12
2	4	6	8	10	12	14	16	18	20	22	24
3	6	9	12	15	18	21	24	27	30	33	36
4	8	12	16	20	24	28	32	36	40	44	48
5	10	15	20	25	30	35	40	45	50	55	60
6	12	18	24	30	36	42	48	54	60	66	72
7	14	21	28	35	42	49	56	63	70	77	84
8	16	24	32	40	48	56	64	72	80	88	96
9	18	27	36	45	54	63	72	81	90	99	108
10	20	30	40	50	60	70	80	90	100	110	120
11	22	33	44	55	66	77	88	99	110	121	132
12	24	36	48	60	72	84	96	108	120	132	144

- IF U SEE ANY TABLE IT IS BASED ON 10

- TABLES HAVE SOME UNIQUE PATTERNS IF ANY ONE CAN UNDERSTAND THOSE, WILL BE THE MASTER OF TABLES. LETS UNDERSTAND.................

LETS TAKE ONE EXAMPLE: TABLE OF **9**

9 IS **ONE** LESS THAN **10** SO THE TABLE OF 9 SHOWS THE SPECIFIC PATTERN.

PLEX	TABLE OF 10	TABLE OF 9
1'S ARE	10	09
2'S ARE	20	18
3'S ARE	30	27
4'S ARE	40	36
5'S ARE	50	45
6'S ARE	60	54
7'S ARE	70	63
8'S ARE	80	72
9'S ARE	90	81
10'S ARE	100	90

HERE 2 THINGS TO BE UNDERSTAND IN TABLE, PATTERN OF ONCE PLACE AND PATTERN OF TENS PLACE. DO U UNDERSTAND?

MENTOS

Y..ESSSS!!!!!!!!!!

AT ONCE PLACE **<u>ONE</u>** IS REDUCING AT EACH STEP WHICH FOLLOWS THE PATTERN BECAUSE **9 IS ONE LESS THAN 10**.

IF U SEE THE TABLE OF 8, AT ONCE PLACE **<u>2</u>** IS REDUCING AT EACH STEP BECAUSE **8 IS 2 LESS THAN 10.**

08

16

24

32

40

48

56

64

72

80

TABLE OF ANY NUMERAL FOLLOWS THE SAME PATTERN AT ONCE PLACE.

- THEN WHAT ABOUT THE TENS PLACE? IS IT ALSO FOLLOW ANY PATTERN?

- U R ABSOLUTELY CORRECT. TENS PLACE ALSO FOLLOWS A SPECIFIC PATTERN.

- NOW TRY TO UNDERSTAND: **REMEMBER 10 IS THE BASE**, WHAT DIGIT AT TENS PLACE OF 10?

  YES U R RIGHT……. IT IS **1**

- AT TENS PLACE 1 IS INCREASING AT EACH STEP (PLEX).

- TABLE 1 TO 10 IT INCREASES **BY 1**, IN TABLE 11 TO 20 IT INCREASES **BY 2** AT EACH STEPS AS 20 IS 2 TIMES OF 10, IN TABLE 21 TO 30 IT INCREASES **BY 3** AT EACH STEP BECAUSE 30 IS 3 TIME OF 10 AND SO ON……

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- LETS UNDERSTAND WITH EXAMPLE:

09	19	29	39	49
18	38	58	78	98
27	57	87	117	147
36	76	116	156	196
45	95	145	195	245
54	114	174	234	294
63	133	203	273	343
72	152	232	312	392
81	171	261	351	431
90	190	290	390	490

U CAN SEE IN ABOVE TABLES, INCRESED BY SPECIFIC NUMBER AT TENS PLACE FOLLOWS THE PATTERN AS EXPLAINED IN PREVIOUS SLIDE.

Multiplication Table - 20x20

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
2	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40
3	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60
4	4	8	12	16	20	24	28	32	36	40	44	48	52	56	60	64	68	72	76	80
5	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
6	6	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96	102	108	114	120
7	7	14	21	28	35	42	49	56	63	70	77	84	91	98	105	112	119	126	133	140
8	8	16	24	32	40	48	56	64	72	80	88	96	104	112	120	128	136	144	152	160
9	9	18	27	36	45	54	63	72	81	90	99	108	117	126	135	144	153	162	171	180
10	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200
11	11	22	33	44	55	66	77	88	99	110	121	132	143	154	165	176	187	198	209	220
12	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240
13	13	26	39	52	65	78	91	104	117	130	143	156	169	182	195	208	221	234	247	260
14	14	28	42	56	70	84	98	112	126	140	154	168	182	196	210	224	238	252	266	280
15	15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270	285	300
16	16	32	48	64	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304	320
17	17	34	51	68	85	102	119	136	153	170	187	204	221	238	255	272	289	306	323	340
18	18	36	54	72	90	108	126	144	162	180	198	216	234	252	270	288	306	324	342	360
19	19	38	57	76	95	114	133	152	171	190	209	228	247	266	285	304	323	342	361	380
20	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	380	400

- NOW SEE THE TABLES AND RECAPITULATE THE CONCEPTS
- HAVING QUESTIONS?....... YES ..... YES ..... YES. ASK !

SIR...RRR MAY I

O! YES

SIR IN 8'S TABLE AT 6TH STEP(6's ARE) TENS PLACE IS NOT INCREASED BY 1 (5TH 40 AND 6TH 48) AND ALSO IN 18'S TABLE AT SAME 6TH STEP IT IS INCREASE BY 1 ONLY AND NOT INCRESED BY 2 (5TH 90 AND 6TH 108) AS U EXPLAINED THE PATTERNS.

NICE OBSERVATIONS   GOOD QUESTION

WHY IS IT SO? LETS UNDERSTAND STEP BY STEP:

❖ ACTUALLY TABLES FOLLOW THE SAME PATTERNS BUT HERE IT IS THE CASE OF BORROWING.

❖ U SEE IN 8'S TABLE AT 5TH STEP (5'S ARE) IS **40**, IT MEANS **0** AT ONCE PLACE.

❖ IN NEXT STEP(6'S ARE) **2** HAVE TO MINUS AT ONCE PLACE (AS 8 IS 2 LESS THAN 10)

❖ BUT CAN U SUBTRACT **2** FROM **0**, CERTAINLY NOT, SO HERE **0** BORROWS **1** FROM TENS PLACE AND NOW **2** SUBTRACT FROM **10** INSTEAD OF **0**

❖ THAT IS WHY AT 6'TH STEP (6'S ARE), IT IS **8** AT ONCE PLACE AND **4** AT TENS PLACE NOT **5**. SAME THING HAPPENS IN 18'S TABLE.

SAME LOGIC APPLY IN ALL TABLES. WHEREVER U FIND ANY DEVIATION FROM THE ABOVE MENTIONED PATTERN THIS LOGIC HELP U TO FIND THE ANSWER.

SOME INTERESTING FACTS OF TABLES

❖ TABLES OF EVEN NO. HAVE ONLY EVEN NUMBERS.

❖ TABLES OF ODD NO. HAVE BOTH ODD AND EVEN NUMBERS.

❖ EVEN NO. STEPS IN TABLES OF ODD NO. HAVE ONLY EVEN NUMBRERS. **EX: 7S 6'S ARE 42.**

❖ TABLES OF **1,3,7,AND 9** HAVING ALL NUMERALS **0 TO 9 AT ONCE PLACE.**

❖ IN EVEN NO. TABLES, DIGITS AT ONCE PLACE OF FIRST 5 NUMERALS REPEATS IN NEXT FIVE STEPS. EX: IN 8'S TABLE SEQUENCE AT ONCE PLACE IS 8,6,4,2,0 WHICH IS REPEATED IN NEXT FIVE STEPS.

❖ DIGITS AT ONCE PLACE IN TABLES 1 TO 10 ARE REPEATED IN 11 TO 20, 21 TO 30 AND SO ON…. IT MEANS DIGIT AT ONCE PLACE REMAIN SAME IN TABLES OF 9,19,29,39 OR 8,18,28,38 OR 7,17,27,37.

HOW TO MEMORISE TABLES

- IF ANY ONE LEARN TABLES 1 TO 10 THEN HE OR SHE CAN LEARN TABLE OF ANY NUMBER AND MEMORISE.

- FOR EX: IF U KNOW 7, 6'S ARE 42 THEN IT IS EASY TO KEEP IN MIND 17, 6'S ARE 102, 27 6'S ARE 162.........

- HERE YOU SEE IN THIS SERIES, AT 6'S ARE, NUMBER INCREASED BY 60. (6--- 60 RELATION).

- IN THE SAME MANNER IF IT IS 7'S ARE THEN IT IS INCRESED BY 70 AND IF 8'S ARE THEN INCRESED BY 80.

I THINK NOW U R CLEAR ENOUGH ABOUT THE BASIS AND LOGICS BEHIND THE PREPARATION OF MULTIPLICATION TABLES.

SEE U ALL IN NEXT PRESENTATION

THANK YOU