



Name: \_\_\_\_\_

## Expanded Addition

	0	0	0	0	0	0	0	0	0	0	0	0	0	
	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+10	+11	+12	
	1	1	1	1	1	1	1	1	1	1	1	1	1	
	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+10	+11	+12	
	2	2	2	2	2	2	2	2	2	2	2	2	2	
	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+10	+11	+12	
	3	3	3	3	3	3	3	3	3	3	3	3	3	
	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+10	+11	+12	
	4	4	4	4	4	4	4	4	4	4	4	4	4	
	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+10	+11	+12	
	5	5	5	5	5	5	5	5	5	5	5	5	5	
	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+10	+11	+12	
	6	6	6	6	6	6	6	6	6	6	6	6	6	
	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+10	+11	+12	
	7	7	7	7	7	7	7	7	7	7	7	7	7	
	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+10	+11	+12	
	8	8	8	8	8	8	8	8	8	8	8	8	8	
	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+10	+11	+12	
	9	9	9	9	9	9	9	9	9	9	9	9	9	
	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+10	+11	+12	
	10	10	10	10	10	10	10	10	10	10	10	10	10	
	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+10	+11	+12	
	11	11	11	11	11	11	11	11	11	11	11	11	11	
	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+10	+11	+12	
	12	12	12	12	12	12	12	12	12	12	12	12	12	
	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+10	+11	+12	



Name: \_\_\_\_\_

## Expanded Subtraction

	0	1	2	3	4	5	6	7	8	9	10	11	12	
	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	
	1	2	3	4	5	6	7	8	9	10	11	12	13	
	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	
	2	3	4	5	6	7	8	9	10	11	12	13	14	
	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	
	3	4	5	6	7	8	9	10	11	12	13	14	15	
	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	
	4	5	6	7	8	9	10	11	12	13	14	15	16	
	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	
	5	6	7	8	9	10	11	12	13	14	15	16	17	
	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	
	6	7	8	9	10	11	12	13	14	15	16	17	18	
	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	
	7	8	9	10	11	12	13	14	15	16	17	18	19	
	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	
	8	9	10	11	12	13	14	15	16	17	18	19	20	
	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	
	9	10	11	12	13	14	15	16	17	18	19	20	21	
	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	
	10	11	12	13	14	15	16	17	18	19	20	21	22	
	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	
	11	12	13	14	15	16	17	18	19	20	21	22	23	
	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	
	12	13	14	15	16	17	18	19	20	21	22	23	24	
	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	



Name: \_\_\_\_\_

## Expanded Multiplication

	0	0	0	0	0	0	0	0	0	0	0	0	0	
	$\times 0$	$\times 1$	$\times 2$	$\times 3$	$\times 4$	$\times 5$	$\times 6$	$\times 7$	$\times 8$	$\times 9$	$\times 10$	$\times 11$	$\times 12$	
	1	1	1	1	1	1	1	1	1	1	1	1	1	
	$\times 0$	$\times 1$	$\times 2$	$\times 3$	$\times 4$	$\times 5$	$\times 6$	$\times 7$	$\times 8$	$\times 9$	$\times 10$	$\times 11$	$\times 12$	
	2	2	2	2	2	2	2	2	2	2	2	2	2	
	$\times 0$	$\times 1$	$\times 2$	$\times 3$	$\times 4$	$\times 5$	$\times 6$	$\times 7$	$\times 8$	$\times 9$	$\times 10$	$\times 11$	$\times 12$	
	3	3	3	3	3	3	3	3	3	3	3	3	3	
	$\times 0$	$\times 1$	$\times 2$	$\times 3$	$\times 4$	$\times 5$	$\times 6$	$\times 7$	$\times 8$	$\times 9$	$\times 10$	$\times 11$	$\times 12$	
	4	4	4	4	4	4	4	4	4	4	4	4	4	
	$\times 0$	$\times 1$	$\times 2$	$\times 3$	$\times 4$	$\times 5$	$\times 6$	$\times 7$	$\times 8$	$\times 9$	$\times 10$	$\times 11$	$\times 12$	
	5	5	5	5	5	5	5	5	5	5	5	5	5	
	$\times 0$	$\times 1$	$\times 2$	$\times 3$	$\times 4$	$\times 5$	$\times 6$	$\times 7$	$\times 8$	$\times 9$	$\times 10$	$\times 11$	$\times 12$	
	6	6	6	6	6	6	6	6	6	6	6	6	6	
	$\times 0$	$\times 1$	$\times 2$	$\times 3$	$\times 4$	$\times 5$	$\times 6$	$\times 7$	$\times 8$	$\times 9$	$\times 10$	$\times 11$	$\times 12$	
	7	7	7	7	7	7	7	7	7	7	7	7	7	
	$\times 0$	$\times 1$	$\times 2$	$\times 3$	$\times 4$	$\times 5$	$\times 6$	$\times 7$	$\times 8$	$\times 9$	$\times 10$	$\times 11$	$\times 12$	
	8	8	8	8	8	8	8	8	8	8	8	8	8	
	$\times 0$	$\times 1$	$\times 2$	$\times 3$	$\times 4$	$\times 5$	$\times 6$	$\times 7$	$\times 8$	$\times 9$	$\times 10$	$\times 11$	$\times 12$	
	9	9	9	9	9	9	9	9	9	9	9	9	9	
	$\times 0$	$\times 1$	$\times 2$	$\times 3$	$\times 4$	$\times 5$	$\times 6$	$\times 7$	$\times 8$	$\times 9$	$\times 10$	$\times 11$	$\times 12$	
	10	10	10	10	10	10	10	10	10	10	10	10	10	
	$\times 0$	$\times 1$	$\times 2$	$\times 3$	$\times 4$	$\times 5$	$\times 6$	$\times 7$	$\times 8$	$\times 9$	$\times 10$	$\times 11$	$\times 12$	
	11	11	11	11	11	11	11	11	11	11	11	11	11	
	$\times 0$	$\times 1$	$\times 2$	$\times 3$	$\times 4$	$\times 5$	$\times 6$	$\times 7$	$\times 8$	$\times 9$	$\times 10$	$\times 11$	$\times 12$	
	12	12	12	12	12	12	12	12	12	12	12	12	12	
	$\times 0$	$\times 1$	$\times 2$	$\times 3$	$\times 4$	$\times 5$	$\times 6$	$\times 7$	$\times 8$	$\times 9$	$\times 10$	$\times 11$	$\times 12$	



Name: \_\_\_\_\_

## Expanded Division

		0 ÷ 1	0 ÷ 2	0 ÷ 3	0 ÷ 4	0 ÷ 5	0 ÷ 6	0 ÷ 7	0 ÷ 8	0 ÷ 9	0 ÷ 10	0 ÷ 11	0 ÷ 12	
		1 ÷ 1	2 ÷ 2	3 ÷ 3	4 ÷ 4	5 ÷ 5	6 ÷ 6	7 ÷ 7	8 ÷ 8	9 ÷ 9	10 ÷ 10	11 ÷ 11	12 ÷ 12	
		2 ÷ 1	4 ÷ 2	6 ÷ 3	8 ÷ 4	10 ÷ 5	12 ÷ 6	14 ÷ 7	16 ÷ 8	18 ÷ 9	20 ÷ 10	22 ÷ 11	24 ÷ 12	
		3 ÷ 1	6 ÷ 2	9 ÷ 3	12 ÷ 4	15 ÷ 5	18 ÷ 6	21 ÷ 7	24 ÷ 8	27 ÷ 9	30 ÷ 10	33 ÷ 11	36 ÷ 12	
		4 ÷ 1	8 ÷ 2	12 ÷ 3	16 ÷ 4	20 ÷ 5	24 ÷ 6	28 ÷ 7	32 ÷ 8	36 ÷ 9	40 ÷ 10	44 ÷ 11	48 ÷ 12	
		5 ÷ 1	10 ÷ 2	15 ÷ 3	20 ÷ 4	25 ÷ 5	30 ÷ 6	35 ÷ 7	40 ÷ 8	45 ÷ 9	50 ÷ 10	55 ÷ 11	60 ÷ 12	
		6 ÷ 1	12 ÷ 2	18 ÷ 3	24 ÷ 4	30 ÷ 5	36 ÷ 6	42 ÷ 7	48 ÷ 8	54 ÷ 9	60 ÷ 10	66 ÷ 11	72 ÷ 12	
		7 ÷ 1	14 ÷ 2	21 ÷ 3	28 ÷ 4	35 ÷ 5	42 ÷ 6	49 ÷ 7	56 ÷ 8	63 ÷ 9	70 ÷ 10	77 ÷ 11	84 ÷ 12	
		8 ÷ 1	16 ÷ 2	24 ÷ 3	32 ÷ 4	40 ÷ 5	48 ÷ 6	56 ÷ 7	64 ÷ 8	72 ÷ 9	80 ÷ 10	88 ÷ 11	96 ÷ 12	
		9 ÷ 1	18 ÷ 2	27 ÷ 3	36 ÷ 4	45 ÷ 5	54 ÷ 6	63 ÷ 7	72 ÷ 8	81 ÷ 9	90 ÷ 10	99 ÷ 11	108 ÷ 12	
		10 ÷ 1	20 ÷ 2	30 ÷ 3	40 ÷ 4	50 ÷ 5	60 ÷ 6	70 ÷ 7	80 ÷ 8	90 ÷ 9	100 ÷ 10	110 ÷ 11	120 ÷ 12	
		11 ÷ 1	22 ÷ 2	33 ÷ 3	44 ÷ 4	55 ÷ 5	66 ÷ 6	77 ÷ 7	88 ÷ 8	99 ÷ 9	110 ÷ 10	121 ÷ 11	132 ÷ 12	
		12 ÷ 1	24 ÷ 2	36 ÷ 3	48 ÷ 4	60 ÷ 5	72 ÷ 6	84 ÷ 7	96 ÷ 8	108 ÷ 9	120 ÷ 10	132 ÷ 11	144 ÷ 12	