Powers of 10 and 2, and Relevance to Computing

Note: an "order of magnitude change" is a change by 10 times

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Orders of Magnitude

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American Name	Greek Name	Greek Symbol	Power of 10	Approx Power of 2	Precise Power of 2 (in decimal)	**Relevance to Computing**
Quadrillion	Peta	P	**15**	50	1.1259E+15	
			14			
			13			
Trillion	Tera	T	**12**	40	1.09951E+12	Server storage (Tbytes), performance Tflop's)
			11			(flops = floating point operation per second)
			10			
Billion	Giga	G	**9**	30	1073741824	CPU clock (GHz), Memory(Gbytes), Communications Gb/sec
			8			Speed of light = 3.8 * 10 ^ 8 cm/sec
			7			
Million	Mega	M	**6**	20	1048576	
			5			
			4			
Thousand	Kilo	k	**3**	10	1024	
			2			
			1			
			0			
			-1	n.a.		
	centi	c	**-2**	n.a.		Chip die sizes (cm)
	milli	m	**-3**	n.a.		
			-4	n.a.		
			-5	n.a.		
	micro	*u* (MU)	**-6**	n.a.		Feature size (e.g., most narrow wire on chip)
			-7	n.a.		"Sub-micron" feature sizes
			-8	n.a.		"Sub-micron" feature sizes
	nano	*n (*NU)	**-9**	n.a.		Clock cycle (nsec), sub-micron feature sizes (nm), RAM access time (nsec)
			-10	n.a.		Atomic diameter (1 Angstrom = 1 * 10 ^ -10 m)
			-11	n.a.		
	pico	p	**-12**	n.a.		
			-13	n.a.		
			-14	n.a.		
	fempto	f	**-15**	n.a.		Capacitive charge on transistors (to make logic-1)