

# The Magnitudes of Physics

*Compiled by*

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absolute zero	0	$\times 10^0$	K
abundance of aluminum in biomass	5.1	$\times 10^{-2}$	%
abundance of aluminum in Earth's crust	8.15	$\times 10^0$	%
abundance of aluminum in seawater	1	$\times 10^{-6}$	%
abundance of argon in atmosphere	9.3	$\times 10^{-1}$	%
abundance of carbon dioxide in atmosphere	3	$\times 10^{-2}$	%
abundance of hydrogen in biomass	1.05	$\times 10^1$	%
abundance of hydrogen in Earth's crust	1.52	$\times 10^{-1}$	%
abundance of hydrogen in seawater	1.08	$\times 10^1$	%
abundance of iron in biomass	1.1	$\times 10^{-1}$	%
abundance of iron in Earth's crust	5.00	$\times 10^0$	%
abundance of iron in seawater	1	$\times 10^{-6}$	%
abundance of nitrogen in atmosphere	7.809	$\times 10^1$	%
abundance of nitrogen in biomass	3.1	$\times 10^0$	%
abundance of nitrogen in Earth's crust	1.9	$\times 10^{-3}$	%
abundance of nitrogen in seawater	5	$\times 10^{-5}$	%
abundance of oxygen in seawater	8.57	$\times 10^1$	%
abundance of oxygen in biomass	7.8	$\times 10^1$	%
abundance of oxygen in Earth's crust	4.66	$\times 10^1$	%
abundance of oxygen in atmosphere	2.095	$\times 10^1$	%
abundance of phosphorous in biomass	7.1	$\times 10^{-1}$	%
abundance of phosphorous in Earth's crust	1.18	$\times 10^{-1}$	%
abundance of phosphorous in seawater	7	$\times 10^{-6}$	%
abundance of silicon in biomass	2.1	$\times 10^0$	%
abundance of silicon in Earth's crust	2.77	$\times 10^1$	%
abundance of silicon in seawater	3	$\times 10^{-4}$	%
acceleration at equator do to rotation of Earth	3.4	$\times 10^{-4}$	$\text{m/s}^2$
acceleration do to seat ejection from jet (extreme)	1.5	$\times 10^2$	$\text{m/s}^2$
acceleration gravity on surface of Moon	1.7	$\times 10^0$	$\text{m/s}^2$
acceleration of auto crash at 60 mph into fixed barrier	1	$\times 10^3$	$\text{m/s}^2$
acceleration of gravity (0 lat)	9.78039	$\times 10^0$	$\text{m/s}^2$
acceleration of gravity (90 lat)	9.83217	$\times 10^0$	$\text{m/s}^2$
acceleration of gravity (mean)	9.8067	$\times 10^0$	$\text{m/s}^2$
acceleration of gravity on surface of Sun	2.7	$\times 10^2$	$\text{m/s}^2$

acceleration of parachute opening (extreme)	3.2	$\times 10^2$	$\text{m/s}^2$
acceleration of proton at Fermilab	9	$\times 10^{13}$	$\text{m/s}^2$
acceleration of ultracentrifuge	3	$\times 10^6$	$\text{m/s}^2$
acceleration that causes "blackout"	7	$\times 10^1$	$\text{m/s}^2$
age of Earth	1.6	$\times 10^{17}$	s
age of most ancient fossils	8.4	$\times 10^{16}$	s
age of most ancient rocks	1.1	$\times 10^{17}$	s
age of oldest stone tool	8	$\times 10^{13}$	s =
age of oldest vertebrate fossil (Bolivian jawless shark)	1.48	$\times 10^{16}$	s
age of oldest written records (Sumerian)	1.6	$\times 10^{11}$	s
age of Universe	3.3	$\times 10^{17}$	s
air intake - average man	2.64	$\times 10^{-4}$	$\text{m}^3/\text{s}$
air intake - average woman	2.44	$\times 10^{-4}$	$\text{m}^3/\text{s}$
albedo (forest)	1.5	$\times 10^{-1}$	
albedo (sand)	2.5	$\times 10^{-1}$	
albedo (snow)	7	$\times 10^{-1}$	
albedo (water, average) - dependent on surface conditions	2	$\times 10^{-1}$	
altitude of a synchronous satellite above Earth	3.5767	$\times 10^7$	m
angular momentum due to orbital motion of Earth	2.7	$\times 10^{40}$	J s
angular momentum due to orbital motion of electron	1.05	$\times 10^{-34}$	J s
angular momentum due to rotation of Earth	5.8	$\times 10^{33}$	J s
angular momentum of automobile wheel (55 mph)	1	$\times 10^2$	J s
angular momentum of bullet from rifle	2	$\times 10^{-3}$	J s
angular momentum of electric fan	1	$\times 10^0$	J s
angular momentum of frisbee	1	$\times 10^{-1}$	J s
angular momentum of helicopter rotor (320 rpm)	5	$\times 10^4$	J s
angular momentum of orbital motion of all planets	3.2	$\times 10^{43}$	J s
angular momentum of phonograph record (33 rpm)	6	$\times 10^{-3}$	J s
angular momentum of toy gyroscope	1	$\times 10^{-1}$	J s
annual carbon monoxide production	8.5	$\times 10^9$	kg
annual nitrogen oxides production	2.1	$\times 10^9$	kg
annual radiation dose from cosmic rays	5	$\times 10^{-2}$	rem
annual sulfur oxide production	2.4	$\times 10^9$	kg
annual radiation dose from medical and dental x rays	7	$\times 10^{-2}$	rem
annual radiation dose from natural 40K in body	2	$\times 10^{-2}$	rem
annual radiation dose from radioactivity of ground and buildings	5	$\times 10^{-2}$	rem
Apatosaurus (AKA Brontosaurus) lives	5.14	$\times 10^{15}$	s ago
Archaeopteryx, possibly the earliest bird, lives	4.73	$\times 10^{15}$	s ago
area of continents	1.49	$\times 10^{14}$	$\text{m}^2$
area of continents (% total Earth)	2.92	$\times 10^1$	%
area of oceans	3.61	$\times 10^{14}$	$\text{m}^2$
area of oceans (% total Earth)	7.08	$\times 10^1$	%
atmospheric $\text{O}_2$ concentration reaches present level	$3.3 \times 10^{10}$		s ago
atmospheric pressure at 0 km elevation	1.01	$\times 10^5$	Pa
atmospheric pressure at 10 km elevation	2.80	$\times 10^4$	Pa

atmospheric pressure at 100 km elevation	5.6	$\times 10^{-2}$	Pa
atmospheric pressure at 20 km elevation	5.6	$\times 10^3$	Pa
atmospheric pressure at 50 km elevation	9.9	$\times 10^1$	Pa
atomic mass unit	1.6605655	$\times 10^{-27}$	kg
Avogadro's number, N	6.02205	$\times 10^{23}$	/mol
base pairs per average human chromosome	1.55	$\times 10^6$	
blackbody temperature of Earth	2.50	$\times 10^2$	K
blackbody temperature of Jupiter	1.3	$\times 10^2$	K
blackbody temperature of Sun	5.75	$\times 10^3$	K
Bohr magneton	9.274078	$\times 10^{-24}$	J/T
Bohr radius of hydrogen atom	5.2917706	$\times 10^{-11}$	m
boiling point of He	4.2	$\times 10^0$	K
boiling point of lead	2.01	$\times 10^3$	K
boiling point of nitrogen	7.7	$\times 10^1$	K
boiling point of tungsten	5.93	$\times 10^3$	K
boiling point of water	3.73	$\times 10^2$	K
Boltzmann constant	1.380662	$\times 10^{-23}$	J/K
Camerian explosion	1.72	$\times 10^{16}$	s ago
carbohydrate intake - average man	4.5	$\times 10^{-6}$	kg/s
carbohydrate intake - average woman	3.1	$\times 10^{-6}$	kg/s
carbon dioxide exhaled - average man	1.2	$\times 10^{-5}$	kg/s
carbon dioxide exhaled - average woman	1.0	$\times 10^{-5}$	kg/s
carbon dioxide flux into atmosphere from decomposition of organic matter	2.2	$\times 10^6$	kg/s
carbon dioxide flux into atmosphere from fossil fuel burning	1.7	$\times 10^5$	kg/s
cats and camels domesticated	1.58	$\times 10^{11}$	s ago
cattle domesticated	2.52	$\times 10^{11}$	s ago
Cenozoic era	2.2-0.0	$\times 10^{15}$	s ago
chicken domesticated	1.26	$\times 10^{11}$	s ago
charge transfer in lightning stroke	2.5	$\times 10^1$	C
classical radius of electron	2.817938	$\times 10^{-15}$	m
coefficient of kinetic friction (waxed skis on snow, 0 deg C)	5	$\times 10^{-2}$	
coefficient of kinetic friction (rubber on concrete)	1	$\times 10^0$	
coefficient of kinetic friction (steel on steel)	6	$\times 10^{-1}$	
coefficient of kinetic friction (waxed skis on ice, -10 deg C)	2	$\times 10^{-1}$	
daily food intake of adult man	1.3	$\times 10^7$	J
density of air at STP	1.2250140	$\times 10^0$	kg/m <sup>3</sup>
density of Earth	5.519	$\times 10^3$	kg/m <sup>3</sup>
density of liquid sodium (98 C)	9.29	$\times 10^2$	kg/m <sup>3</sup>
density of mercury (element)	1.36	$\times 10^4$	kg/m <sup>3</sup>
density of Moon	3.342	$\times 10^4$	kg/m <sup>3</sup>
density of rabbits in Nevada	1	$\times 10^{-5}$	/m <sup>2</sup>

density of Sun	1.410	$\times 10^3$	kg/m <sup>3</sup>
density of water (273 K)	9.9987	$\times 10^2$	kg/m <sup>3</sup>
density of water (277.13 K)	1.00	$\times 10^3$	kg/m <sup>3</sup>
depth of oceans (mean)	3.794	$\times 10^3$	m
diameter of 12 gauge wire	2.053	$\times 10^{-3}$	m
diameter of human hair	1	$\times 10^{-4}$	m
diameter of human red blood cell	7.5	$\times 10^{-6}$	m
diameter of iron nucleus	8	$\times 10^{-15}$	m
diameter of Milky Way galaxy	7.6	$\times 10^{20}$	m
diameter of nickel coin	2.1	$\times 10^{-2}$	m
diameter of proton	2	$\times 10^{-15}$	m
diameter of smallest virus (potato spindle)	2	$\times 10^{-8}$	m
diameter of typical atom	1	$\times 10^{-10}$	m
diastolic blood pressure	1.1	$\times 10^4$	Pa
dielectric constant of air	1.00054	$\times 10^0$	
dielectric constant of lead titanate	1.2	$\times 10^4$	
dielectric constant of vacuum	1	$\times 10^0$	
dielectric constant of water	8.0	$\times 10^1$	
distance to Andromeda galaxy	2.1	$\times 10^{26}$	m
dog domesticated	3.78	$\times 10^{11}$	s ago
earliest evidence of photosynthetic activity	1.1	$\times 10^{17}$	s ago
earliest grasses	1.70	$\times 10^{17}$	s ago
earliest known Homo sapiens sapiens	2.84	$\times 10^{12}$	s ago
earliest primates	1.58	$\times 10^{15}$	s ago
earliest reptiles	1.07	$\times 10^{16}$	s ago
earliest rodents	1.80	$\times 10^{15}$	s ago
Earth's rotational velocity at equator	4.651	$\times 10^2$	m/s
efficiency of dry cell battery	9.1	$\times 10^1$	%
efficiency of gas laser	4	$\times 10^1$	%
efficiency of light bulb	3	$\times 10^0$	%
efficiency of solar cell	1.2	$\times 10^1$	%
electric field at orbit of 1s electron in H atom	6	$\times 10^{11}$	N/C
electric field at the surface of U nucleus	2	$\times 10^{21}$	N/C
electric field needed to ionize air	3	$\times 10^6$	N/C
electric field of typical radio wave	1	$\times 10^{-1}$	N/C
electric field of x-ray tube	5	$\times 10^6$	N/C
electron rest mass, m	9.109534	$\times 10^{-31}$	kg
electronic charge	1.6021	$\times 10^{-19}$	C
emf induced between wingtips of 747 by Earth's magnetic field	7.5	$\times 10^{-1}$	V
emf of dry cell	1.5	$\times 10^0$	V
energy content of beer	1.8	$\times 10^6$	J/kg
energy content of coal	2.93	$\times 10^7$	J/kg
energy content of gasoline	4.8	$\times 10^7$	J/kg
energy content of natural gas (at STP)	3.9	$\times 10^7$	J/m <sup>3</sup>
energy equivalent of 1 kg mass	8.987	$\times 10^{16}$	J

energy from combustion of 1 gal gasoline	1.3	$\times 10^8$	J
energy from explosion of supernova	1	$\times 10^{44}$	J
energy from explosion of TNT	4.6	$\times 10^6$	J/kg
energy from fission of U-235	8.2	$\times 10^{13}$	J/kg
energy from metabolization of apple	4.6	$\times 10^5$	J
energy from magnitude 6.7 earthquake (1994 Northridge, CA)	7.08	$\times 10^{14}$	J
energy from magnitude 7.0 earthquake (1979, Loma Prieta, CA)	2.00	$\times 10^{15}$	J
energy from magnitude 9.2 earthquake (1964, Alaska)	3.98	$\times 10^{18}$	J
energy from magnitude 9.5 earthquake (largest ever recorded, 1960 Chile)	1.23	$\times 10^{19}$	J
energy in all fossil fuels on Earth	2.0	$\times 10^{23}$	J
energy of 1 megaton nuclear weapon	4.2	$\times 10^{15}$	J
energy of fission of one U-235 nucleus	3.2	$\times 10^{-11}$	J
energy of Hiroshima size A bomb	2.1	$\times 10^{14}$	J
energy of ionization of electron from H	2.2	$\times 10^{-18}$	J
energy of lightning flash	1	$\times 10^9$	J
energy of one push up	3	$\times 10^2$	J
energy release in annihilation of matter	9.0	$\times 10^{16}$	J/kg
energy stored in nuclear fuel in reactor	1	$\times 10^{16}$	J
energy stored in nuclear fuel in Sun	1	$\times 10^{45}$	J
energy stored in typical flashlight battery	7	$\times 10^3$	J
equilibrium constant of bicarbonate ion	4.7	$\times 10^{-11}$	
equilibrium constant of carbonic acid	4.5	$\times 10^{-7}$	
equilibrium constant of hydrochloric acid	1	$\times 10^3$	
equilibrium constant of nitric acid	1	$\times 10^1$	
equilibrium constant of water	1	$\times 10^{-14}$	
escape velocity from Earth	1.1179	$\times 10^4$	m/s
estimated energy stock of petroleum	1	$\times 10^{22}$	J
estimated energy stock of coal	2.5	$\times 10^{23}$	J
estimated energy stock of deuterium and lithium for fusion	1	$\times 10^{31}$	J
estimated energy stock of natural gas	1	$\times 10^{22}$	J
estimated energy stock of oil shale	2	$\times 10^{24}$	J
estimated energy stock of uranium and thorium for breeders	1	$\times 10^{26}$	J
eukaryotes begin to dominate	4.4	$\times 10^{16}$	s ago
Euler's number, e	2.71828182	$\times 10^0$	
Faraday's constant, F	9.6487	$\times 10^4$	C/mol e
fat intake - average man	1.4	$\times 10^{-6}$	kg/s
fat intake - average woman	9.3	$\times 10^{-7}$	kg/s
fine structure constant	7.2973506	$\times 10^{-3}$	
flowering plants originate	3.94	$\times 10^{15}$	s ago
food energy intake - average man	1.35	$\times 10^2$	J/s
food energy intake - average woman	1.06	$\times 10^2$	J/s

force of automobile braking	1	$\times 10^4$	N
force of jet engines of 747	7.7	$\times 10^5$	N
force of proton on electron in H atom	8	$\times 10^{-8}$	N
force of thrust Saturn V engines	3.3	$\times 10^7$	N
force needed by walking person to overcome air friction	3	$\times 10^{-1}$	N
freezing point of water	2.73	$\times 10^2$	K
frequency of middle C	2.56	$\times 10^2$	Hz
galaxies in universe (Hubble, 1998)	5	$\times 10^{10}$	
goats and sheep domesticated	2.83	$\times 10^{11}$	s ago
goldfish domesticated	3.26	$\times 10^{10}$	s ago
gravitational constant, G	6.6720	$\times 10^{-11}$	$\text{m}^3/\text{s}^2 \text{ kg}$
gravitational force of Earth on a man	7.3	$\times 10^2$	N
gravitational force of Earth on Moon	2.0	$\times 10^{20}$	N
gravitational force of Earth on nickel (coin)	5.1	$\times 10^{2N}$	
gravitational force of Sun on Earth	3.5	$\times 10^{22}$	N
gravitational potential energy of 747 at 30,000 ft	2	$\times 10^{10}$	J
greatest magnetic field (maximum produced in lab)	1	$\times 10^3$	T
guinea pig domesticated	9.46	$\times 10^{10}$	s ago
half life of caffeine in adult human	1.3	$\times 10^4$	s
half life of caffeine in adult pregnant woman	6.5	$\times 10^4$	s
half life of free neutron	9.2	$\times 10^2$	s
half life of positive pi meson	2.67	$\times 10^{-8}$	s
height of man (average)	1.8	$\times 10^0$	m
horse domesticated	1.89	$\times 10^{11}$	s ago
heat of fusion of mercury	1.1	$\times 10^4$	J/kg
heat of fusion of water	3.29	$\times 10^5$	J/kg
heat of vaporization of mercury	2.88	$\times 10^5$	J/kg
heat of vaporization of water	2.285	$\times 10^6$	J/kg
heat output of man (average)	1	$\times 10^2$	J/s
high end of hearing range of young adult	2	$\times 10^4$	Hz
highest pressure achieved in laboratory	5	$\times 10^{11}$	Pa
highest temperature achieved in laboratory	6	$\times 10^7$	K
highway speed limit velocity	2.5	$\times 10^1$	m/s
Hubble constant	2.4	$\times 10^{-18}$	/s
Holocene epoch begins	3.16	$\times 10^{11}$	s ago
Homo erectus lives	5.05	$\times 10^{13}$	s ago
Homo habilis, earliest member of species Homo, lives	5.83	$\times 10^{13}$	s ago
human body temperature	3.10	$\times 10^2$	K
hydrogen atom mass	1.68	$\times 10^{-27}$	kg
ideal gas constant, R	8.3143	$\times 10^0$	J/K mole
inclination of Earth's axis to orbit	2.345	$\times 10^1$	degrees
index of refraction of heavy flint glass	1.66	$\times 10^0$	
index of refraction of water	1.33	$\times 10^0$	

iron atom mass	9.5	$\times 10^{-26}$	kg
Josephson frequency to voltage ratio	4.835939	$\times 10^{14}$	Hz/V
kinetic energy of Earth revolving around the Sun	2.6	$\times 10^{33}$	J
kinetic energy of Earth rotating about its axis	2.1	$\times 10^{24}$	J
kinetic energy of falling rain drop	4	$\times 10^{-3}$	J
kinetic energy of highest energy cosmic ray	5.0	$\times 10^1$	J
kinetic energy of Krakatoa volcano	6	$\times 10^{18}$	J
kinetic energy of large locomotive	5	$\times 10^5$	J
kinetic energy of rifle bullet	4	$\times 10^4$	J
kinetic energy of running man	4	$\times 10^3$	J
kinetic energy of walking man	6.0	$\times 10^1$	J
length of HMS Queen Elizabeth	3.1	$\times 10^2$	m
lifetime of average human intestinal cell (from lecture by Paul Silverman)	2.59	$\times 10^5$	s
ln 2	6.9314718	$\times 10^{-1}$	
ln 10	2.30258509	$\times 10^0$	
low end of hearing range of young adult	3.5	$\times 10^1$	Hz
lowest temperature achieved in laboratory	5	$\times 10^{-4}$	K
Lucy, an Australopithecus afarensis, lives	1.01	$\times 10^{14}$	s ago
magnetic field of typical AM radio wave	1	$\times 10^{-9}$	T
magnetic field produced by human body	3	$\times 10^{-10}$	T
magnetic moment of electron	9.284832	$\times 10^{-24}$	J/T
magnetic field of Earth (average)	5	$\times 10^{-5}$	T
magnetic field at nucleus	1	$\times 10^{12}$	T
magnetic field of large electromagnet	2	$\times 10^0$	T
magnetic field of typical ceramic magnet	2	$\times 10^{-2}$	T
magnetic flux quantum	2.0678506	$\times 10^{-15}$	Wb
mass - average man	7	$\times 10^1$	kg
mass - average woman	5.8	$\times 10^1$	kg
mass of Earth	5.9742	$\times 10^{24}$	kg $\equiv$
mass of HMS Queen Elizabeth	7.6	$\times 10^7$	kg
mass of junk mail delivered in US	4.4	$\times 10^1$	kg/s
mass of living matter on Earth	3.6	$\times 10^{14}$	kg
mass of Milky Way	4	$\times 10^{41}$	kg
mass of Moon	7.354	$\times 10^{22}$	kg
mass of pion	2.50	$\times 10^{-28}$	kg
mass of proton	1.6726485	$\times 10^{-27}$	kg
mass of rain drop	2	$\times 10^{-6}$	kg
mass of red blood cell	9	$\times 10^{-14}$	kg
mass of smallest virus	9.5	$\times 10^{-21}$	kg
mass of Sun	1.99	$\times 10^{30}$	kg
mass of Universe	1	$\times 10^{53}$	kg
mass of W boson	1.4	$\times 10^{-25}$	kg

mass of Z boson	1. 7	$\times 10^{-25}$	kg
mass of 747 (empty)	1. 6	$\times 10^5$	kg
mass of typical automobile	1. 5	$\times 10^3$	kg
maximum upward force exerted by forearm in isometric exercise	2. 7	$\times 10^2$	N
mean temperature at surface of Earth	2. 87	$\times 10^2$	K
melting point of iron	1. 8	$\times 10^3$	K
melting point of lead	6	$\times 10^2$	K
melting point of nitrogen	6. 3	$\times 10^1$	K
melting point of tungsten	3. 68	$\times 10^3$	K
melting point of water	2. 73	$\times 10^2$	K
Mesozoic era	7. 1-2. 2	$\times 10^{15}$	s ago
molar volume of gas at STP	2. 241383	$\times 10^{-2}$	m <sup>3</sup>
muon magnetic moment	4. 490474	$\times 10^{-26}$	J/T
neutrino flux at surface of earth	6	$\times 10^{14}$	/m <sup>2</sup> s
neutron rest mass	1. 6749543	$\times 10^{-27}$	kg
number of bacteria in a site of periodontal gum disease	1	$\times 10^{10}$	
number of cobblers in USA	1. 4	$\times 10^4$	
number of households in USA (1980)	7	$\times 10^7$	
number of human chromosomes	2. 3	$\times 10^1$	
number of nucleons in Universe	1	$\times 10^{80}$	
orbital radius of Earth	1. 49457	$\times 10^{11}$	m
orbital radius of Mercury	5. 795	$\times 10^{10}$	m
orbital radius of Moon	3. 84403	$\times 10^8$	m
orbital radius of Pluto	5. 909	$\times 10^{12}$	m
overpressure on eardrum due to jet engine 2 m away	2	$\times 10^1$	Pa
overpressure in car tire	2	$\times 10^5$	Pa
Paleozoic era	1. 8-0. 7	$\times 10^{16}$	s ago
percent all energy in US used by automobiles	1. 3	$\times 10^1$	%
percent all energy in US used by trucks	5	$\times 10^0$	%
percent all energy in US used for residential space heating	1. 1	$\times 10^1$	%
percent all energy in US used for residential air conditioning	1	$\times 10^0$	%
percent all energy in US used in manufacture of metals	9	$\times 10^0$	%
period of AM radio wave	1	$\times 10^{-5}$	s
period of average heartbeat	9	$\times 10^{-1}$	s
period of Halley's Comet	2. 4	$\times 10^9$	s
period of middle C	3. 8	$\times 10^{-3}$	s
period of revolution of Earth	3. 1558150	$\times 10^7$	s
period of revolution of Moon	2. 36055	$\times 10^6$	s
period of rotation of Earth	8. 616406	$\times 10^4$	s
period of rotation of Moon	2. 36055	$\times 10^6$	s
period of rotation of Sun	2. 125	$\times 10^6$	s

permeability of vacuum	1. 25663706	$\times 10^{-6}$	H/m
Permian extinction	7. 89	$\times 10^{15}$	s ago
permittivity of vacuum	8. 85418781	$\times 10^{-12}$	F/m
pH of acid rain	4	$\times 10^0$	
pH of pure water	7	$\times 10^0$	
photons emitted by a 100 watt light bulb	1	$\times 10^{20}$	/s
pi	3. 14159265	$\times 10^0$	
pig domesticated	3. 21	$\times 10^{11}$	s ago
plants invade land	1. 33	$\times 10^{16}$	s ago
Planck's constant, h	6. 6256	$\times 10^{-34}$	J s
population of USA (1650)	2. 3	$\times 10^6$	people
population of USA (1850)	7. 6	$\times 10^7$	people
population of USA (1900)	9. 2	$\times 10^7$	people
population of USA (1950)	1. 52	$\times 10^8$	people
population of USA (1983)	2. 34	$\times 10^8$	people
population of world (1650)	5	$\times 10^8$	people
population of world (1850)	1. 1	$\times 10^9$	people
population of world (1900)	1. 6	$\times 10^9$	people
population of world (1950)	2. 5	$\times 10^9$	people
population of world (1983)	4. 7	$\times 10^9$	people
power consumption of coal in USA	4. 8	$\times 10^{11}$	J/s
power consumption of coal in world	2. 9	$\times 10^{12}$	J/s
power consumption of natural gas in USA	6. 3	$\times 10^{11}$	J/s
power consumption of natural gas in world	1. 9	$\times 10^{12}$	J/s
power consumption of petroleum in USA	1. 3	$\times 10^{12}$	J/s
power consumption of petroleum in world	4. 3	$\times 10^{12}$	J/s
power consumption of U-235 in world	2. 0	$\times 10^{11}$	J/s
power consumption of world (1980)	8. 7	$\times 10^{11}$	J/s
power of 747 jet engine	2. 1	$\times 10^8$	J/s
power of athlete at maximum	2	$\times 10^2$	J/s
power of bumblebee in flight	2	$\times 10^{-2}$	J/s
power of car engine	1. 5	$\times 10^5$	J/s
power of hurricane	2	$\times 10^{13}$	J/s
power of large power plant	1	$\times 10^9$	J/s
power of large radio transmitter	1	$\times 10^5$	J/s
power of large tugboat	1	$\times 10^6$	J/s
power of lightbulb	1	$\times 10^2$	J/s
power of sunlight striking Earth	1. 7	$\times 10^{17}$	J/s
power of toaster	1	$\times 10^3$	J/s
power of typical atom radiating light	1	$\times 10^{-10}$	J/s
power produced by U-235 fission in USA	9. 8	$\times 10^{10}$	J/s
power radiated by Sun into space	3. 7	$\times 10^{26}$	J/s
pressure at bottom of ocean	6	$\times 10^7$	Pa
pressure at center of Earth	4	$\times 10^{11}$	Pa
pressure at core of neutron star	1	$\times 10^{38}$	Pa
pressure at sealevel	1. 01	$\times 10^5$	Pa
protein intake - average man	1. 1	$\times 10^{-6}$	kg/s

protein intake - average woman	7.6	$\times 10^{-7}$	kg/s
quantum of circulation	3.6369455	$\times 10^{-4}$	J s/kg
rabbit domesticated	6.31	$\times 10^{10}$	s ago
radiation dose causing 100% fatalities within 2 days	5	$\times 10^3$	rem
radiation dose causing 100% fatalities within 2 weeks	1	$\times 10^3$	rem
radiation dose from dental x ray	2	$\times 10^{-2}$	rem
radiation dose from mammography x ray	2.5	$\times 10^{-1}$	rem
radius of asteroid that killed off the dinosaurs	4	$\times 10^3$	m
radius of Earth	6.371	$\times 10^6$	m
radius of Moon	1.7383	$\times 10^6$	m
radius of Sun	6.95950	$\times 10^8$	m
radius of Universe	1	$\times 10^{28}$	m
rate of supernovae in the Universe	1	$\times 10^0$	/s
rate spent fuel rods produced by nuclear reactors in United States	6	$\times 10^{-2}$	kg/s
recession velocity of fastest quasar	2.7	$\times 10^8$	m/s
residence time of freons in atmosphere	3.15	$\times 10^9$	s
resistivity of epoxy	1	$\times 10^{13}$	ohm m
resistivity of glass	1	$\times 10^{10}$	ohm m
resistivity of nichrome	1.00	$\times 10^{-6}$	ohm m
resistivity of silicon	2.6	$\times 10^1$	ohm m
resistivity of silver	1.6	$\times 10^{-6}$	ohm m
reverberation time of St. Louis Powell Hall	2.2	$\times 10^0$	s
Rydberg constant	1.09737317	$\times 10^7$	/m
Schwarzschild radius of Sun	3	$\times 10^3$	m
sound intensity causing rupture of ear drum	1.6	$\times 10^2$	dB
sound intensity for threshold of hearing	4	$\times 10^0$	dB
sound intensity for threshold of pain	1.2	$\times 10^2$	dB
sound intensity of heavy street traffic	7	$\times 10^1$	dB
sound intensity of jet engine at 30 m	1.3	$\times 10^2$	dB
sound intensity of normal breathing	1	$\times 10^1$	dB
sound intensity of normal conversation	6	$\times 10^1$	dB
sound intensity of rock music	1.15	$\times 10^2$	dB
sound intensity of subway train (NYC)	1.0	$\times 10^2$	dB
sound intensity of thunder (close)	1.10	$\times 10^2$	dB
sound intensity of whisper	2	$\times 10^1$	dB
specific heat of aluminum	8.85	$\times 10^2$	J/kg K
specific heat of marble	8.7	$\times 10^2$	J/kg K
specific heat of water	4.134	$\times 10^3$	J/kg K
spent fuel rods from nuclear reactors (US)	3	$\times 10^7$	kg
spin of electron or proton	5.3	$\times 10^{-35}$	J s
stars in a typical galaxy	1	$\times 10^{11}$	
strong force on proton in nucleus	1	$\times 10^4$	N

sulfur flux into atmosphere from burning of fossil fuels	2.7	$\times 10^3$	kg/s
sulfur flux into atmosphere from natural sources	4.8	$\times 10^3$	kg/s
surface area - average man	1.8	$\times 10^0$	m <sup>2</sup>
surface area - average woman	1.6	$\times 10^0$	m <sup>2</sup>
systolic blood pressure	1.6	$\times 10^4$	Pa
temperature at center of Earth	4	$\times 10^3$	K
temperature at center of H bomb	1	$\times 10^8$	K
temperature at center of Sun	1.5	$\times 10^7$	K
temperature at surface of Sun	4.5	$\times 10^3$	K
temperature inside hottest star	1	$\times 10^9$	K
temperature of acetylene torch	2.9	$\times 10^3$	K
temperature of outer space	2.726	$\times 10^0$	K
thermal coefficient of expansion for aluminum	2.4	$\times 10^{-5}$	/K
thermal coefficient of expansion of mercury	1.8	$\times 10^{-4}$	/K
thermal conductivity of aluminum	2	$\times 10^2$	J/s m K
thermal conductivity of down	4.6	$\times 10^{-3}$	J/s m K
thermal conductivity of ice	1.2	$\times 10^0$	J/s m K
thermal conductivity of lead	3.5	$\times 10^1$	J/s m K
thermal conductivity of porcelain	2.5	$\times 10^{-1}$	J/s m K
thermal conductivity of silver	4.0	$\times 10^2$	J/s m K
thermal conductivity of styrofoam	2	$\times 10^{-3}$	J/s m K
thermal conductivity of water (273 K)	5.63	$\times 10^{-1}$	J/s m K
thermal conductivity of water (373 K)	6.83	$\times 10^0$	J/s m K
Thomson cross section	6.652448	$\times 10^{-27}$	m <sup>2</sup>
time between hits by asteroids of $r \Rightarrow 4000$ m on Earth	3	$\times 10^{15}$	s
total body water - average man	6.0	$\times 10^1$	%
total body water - average woman	5.0	$\times 10^1$	%
travel time for light from Moon	1.3	$\times 10^0$	s
travel time for light from nearest star	1.4	$\times 10^8$	s
travel time for light from Sun	5	$\times 10^2$	s
turkey domesticated	4.71	$\times 10^{10}$	s ago
velocity of brisk walk	1.3	$\times 10^0$	m/s
velocity of cheetah	2.8	$\times 10^1$	m/s
velocity of Concorde SST	7.1	$\times 10^2$	m/s
velocity of continental drift	1	$\times 10^{-9}$	m/s
velocity of Earth around Sun	3.0	$\times 10^3$	m/s
velocity of electron around H atom	2.2	$\times 10^8$	m/s
velocity (average) of elevator in skyscraper	9	$\times 10^0$	m/s
velocity of fast baseball (Nolan Ryan, 1974)	4.51	$\times 10^1$	m/s
velocity of glacier	1	$\times 10^{-6}$	m/s
velocity of hair growth	3	$\times 10^{-9}$	m/s
velocity of light in vacuum, c	2.99792458	$\times 10^8$	m/s
velocity of nerve signal	4.9	$\times 10^1$	m/s
velocity of random motion of air molecules	4.5	$\times 10^2$	m/s

velocity of rifle bullet	7	$\times 10^2$	m/s
velocity of snail	1	$\times 10^{-3}$	m/s
velocity of sound in air at 0 C, 1 atm	3.3145	$\times 10^2$	m/s
velocity of winner of 100 m dash	1.2	$\times 10^1$	m/s
vertebrates, invertebrates diverge	1.89	$\times 10^{16}$	s ago
viscosity of air (STP)	1.72	$\times 10^{-7}$	Ns/m <sup>2</sup>
viscosity of water (273 K)	1.79	$\times 10^{-3}$	Ns/m <sup>2</sup>
viscosity of water (373 K)	2.8	$\times 10^{-4}$	Ns/m <sup>2</sup>
water intake - average man	3.5	$\times 10^{-5}$	kg/s
water intake - average woman	2.1	$\times 10^{-5}$	kg/s
water used for agriculture in USA	6.5	$\times 10^3$	m <sup>3</sup> /s
water used for agriculture in world	6.7	$\times 10^4$	m <sup>3</sup> /s
water used for domestic purposes in USA	1.3	$\times 10^3$	m <sup>3</sup> /s
water used for domestic purposes in world	7.0	$\times 10^3$	m <sup>3</sup> /s
wavelength of AM radio wave	3	$\times 10^3$	m
wavelength of blue hydrogen line	4.342	$\times 10^{-7}$	m
wavelength of green hydrogen line	4.863	$\times 10^{-7}$	m
wavelength of higher of sodium D lines	5.898	$\times 10^{-7}$	m
wavelength of lower of sodium D lines	5.892	$\times 10^{-7}$	m
wavelength of purple light	4	$\times 10^{-7}$	m
wavelength of red hydrogen line	6.565	$\times 10^{-7}$	m
wavelength of red light	7	$\times 10^{-7}$	m
wavelength of tsunami	2	$\times 10^5$	m
year	3.1556926	$\times 10^7$	s

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