

A collection of interesting numbers by James Bryant,

INTERESTING INFORMATION (page1)

Number of seconds in a year is about $p \times 10^7$.

Earth's rotational speed is about 1,000 mph.

Earth's orbital speed around the sun is about 67,000 mph.

Number of atoms in one model of the universe is 10^{80} .

Number of possible variations in a 60 move per person game of chess is about 10^{120} (10^{115} in a 40 move game per side).

Number of spoken words since the beginning of time $\gg 10^{16}$

At 1994 there were 31 known perfect numbers, the first seven are:

6, 28, 496, 8,128, 33,550,336, 8,589,869,057 and 137,438,691,328.

The last one discovered is $2^{756839}-1$. No odd perfect numbers have been found.

The population of the world is over 5 billion (@ 1994).

About 220,000 people are born every day.

There are about 5,776 stars visible to the naked eye.

Light travels about 5.8×10^{12} miles in a year.

Edge of the observable universe is 14,000,000,000 light years (roughly 8×10^{22} miles).

Magnetic background radiation between 15 & 90 nanotesla.

Speed of sound (0°C) 331 m/s = 750 mph (0.20 miles per second)

Ratio of the speed of light to speed of sound = 1 million.

p (pi) good approximation is 355/113.

Man (Neil Armstrong 3.56 am) first walked on the moon 21 July 1969

My old telephone number 212265 is unusual in that it is the sum of two squares in four different ways:

$$339^2 + 312^2$$

$$429^2 + 168^2$$

$$444^2 + 123^2$$

$$453^2 + 84^2$$

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USELESS INFORMATION (page 2)

Rain drops - terminal velocity of 18 mph and cannot exceed 1/4" diameter.

Temperature reversal, 28°C = 82°F

Isaac	30776	62773
+Lights =	93584	= 46859
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Optics	124360	109632
=====	=====	=====

Fermat's last theorem was solved in 1992 (mistake) > 1994 (further 18 months) by Wild!

Rifle bullet modern, speed is » 2,250 mph

Longbow - good archer is capable of firing 12 arrows per minute with a range of over 200 yds.

Veins/arteries/capillaries = 60,000 miles in the human body.

Permutations The number of different ways (say) 6 different coloured balls can be sorted is six factorial (6!) = 720.

BUILDING/CIVILS

GRADINGS (fine/sand/aggregate):

Fines are everything passing the 75 mm sieve.

Sand is everything passing the 5 mm sieve.

Aggregate is everything above the 5 mm sieve.

CRACKS less than 0.1 mm are noticeable only if wetted. Cracks between 0.1 mm and 0.5 mm are noticeable with unaided eye. Cracks over 0.5 mm have edges that are distinct.

HEATLOSS

General formulae $q = Ka(q_1 - q_2)/d$

Where K = thermal conductivity ($Wm^{-1}k^{-1}$)

($q_1 - q_2$) = temp difference

a = area

d = thickness

or, $q = ua(q_1 - q_2)$ where $u = k/d$ (the "U" value, lower the better)

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USELESS INFORMATION (page 3)

IN.

BRACHISTOCROME (problem) - a curve joining two points such that a body travelling along it under gravity takes the shortest time possible.

SAFETY (BUILDING)

Weil's Disease (Adolf Weil 1848-1916) Sometimes fatal, form of Leptospirosis that is characterised by fever, muscle pains etc. Caught by infection from rats via contaminated water.

There are about 4,000 accidents each year of which about 133 are fatal (1997)

40% of major injuries involve falls and 25% of all injuries are caused by manual handling. Over 50% of deaths are from falls.

Sound intensity (range) is about 10^{12} . rustling leaves (10 dB) physical damage (140 dB). Each difference of 10 dB corresponds to a factor of 10 in sound intensity.

EARTH THE DATA:

Mass = 5.977×10^{24} Kg

Age some 4.6×10^9 years

Volume = 1.083×10^{21} kg

Mean Density = $5,517 \text{ kgm}^{-3}$

Mean Radius = 6,371 km (about 3,960 miles)

Escape Velocity = 25,000 mph ($V=[2Rg]^{1/2}$)

Rotation Speed = 1,000 mph

Orbital Speed = 67,000 mph

Average energy of light falling = 1.36 Kw/m²

Average depth of oceans » 4000m

Maximum number of spheres (of the same shape) that can come into contact with any sphere of the same size = 12 around 1 and occupies 74% of space (by IN).

Sequence of most common letters in speech:

(Mnemonic - ET Automatically Opens Intricate Night Shirt Hurriedly Releasing Drooling Letting CUM)

E,T,A,O,I,N,S,H,R,D,L,C,U,M,F,W,Y,P,V,B,G,K,Q,J,X and Z

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USELESS INFORMATION (page 4)

Average person has 12,367 thoughts a day (Peugeot 406 advert, c 1999).

Grace Hooper (1945) first coined the phrase "bugs" on finding a moth in the computers circuitry.

The human body is 60% water and the number of cells in the body is 75 trillion.

Mass of an electron is 10^{-31} Kg.

SKY IS BLUE because light from the sun is scattered as it enters the atmosphere by the dust and gas molecules. Blue light being scattered the most and thus makes the sky appear blue against a black background. In the morning and at dusk the sky appears red because the light travels further through the atmosphere and red light is scattered most (redder at night as more dust is generated). Red light has a longer wavelength and more energy than blue.

SNOW FLAKES... mostly 6 sided (hexagonal pattern), but three and 12 branched forms occur occasionally.

LIGHT - wave length of about 500 nanometres

NUMBER 7

SEVEN DEADLY SINS: sex, sloth, envy, coyness, anger, drunkenness, pride.

SEVEN WONDERS OF THE WORLD: Hanging gardens of Babylon, Statue of Zeus, Temple of Artemis, Colossus of Rhodes, Lighthouse at Alexandria, Pyramids at Giza, Mausoleum of Halicarnassus.

SEVEN COLOURS OF THE RAINBOW

SEVEN NATURAL WONDERS OF THE WORLD: Mt Everest, Victoria Falls, Grand Canyon, Great Barrier Reef, Northern Lights, Paricutin (volcano in Mexico) and Harbour at Rio De Janeiro.

SEVEN WONDERS OF THE MIDDLE AGES: Colosseum of Rome, Catacombs of Alexandria, Stonehenge, Leaning Tower of Pisa, Porcelain Tower of Nanking and Mosque of Hagia Sophia.

ICEBERGS: Specific gravity of 0.9 & therefore six-sevenths is under water, piano size icebergs are called growlers.

Age of the universe some 10^{10} years.