

Drake Equation Worksheet

The Drake Equation: $N = N_* f_s N_p f_e f_l f_i f_c f_t$

N = the number of technical civilizations in the Galaxy at present

Factors

My Guess

N_* = the number of stars in our Galaxy

$N_* =$ _____

f_s = the fraction of all stars that are similar to the Sun

$f_s =$ _____

N_p = the average number of planets per Sun-like star

$N_p =$ _____

f_e = the fraction of planets about Sun-like stars that are similar to the Earth

$f_e =$ _____

f_l = the fraction of such planets on which life has actually developed

$f_l =$ _____

f_i = the fraction of these planets on which intelligent life has evolved

$f_i =$ _____

f_c = the fraction of these planets on which a technical civilization has developed

$f_c =$ _____

f_t = the fraction of time since the development of a planet's initial technical civilization that a technical civilization has existed on the planet; $f_t = L / t$ where L is the lifetime of an average technical civilization and t is the average time elapsed since the inception of a technical civilization on each planet -- estimated at about 3 billion years. ($f_t = L / 3$ billion yrs)

L = _____ yrs

N = the number of Earth-like planets (orbiting Sun-like stars in the Galaxy) on which a technical civilization currently exists,
which equals the number of technical civilizations in the Galaxy at present.

$$N_* \times f_s \times N_p \times f_e \times f_l \times f_i \times f_c \times L / t = N$$

My Guess: _____ x _____ x _____ x _____ x _____ x _____ x _____ x _____ / 3 billion = _____