

Name _____

Calculating the odds of intelligent alien life (Youtube)

Does life exist outside of our Earth?

1. What are scientists called that look for life outside of Earth? _____
2. Name three places that astrobiologist are looking form microbial life?
 - a. _____
 - b. _____
 - c. _____
3. What does S.E.T.I. stand for?
4. The DRAKE Equation attempts to estimate the number of technological societies in _____.
5. $N = R^* \times f_p \times n_e \times f_i \times f_c \times L$
 - a. R^* is _____
 - b. f_p is _____
 - c. n_e is _____
 - d. f_i is _____
 - e. f_c is _____
 - f. L is _____
6. What does it mean to the Drake Equation if we find life in 2 places in our solar system?
7. You can simplify the equation of $N \approx$ _____
8. What does L tell us about ourselves (Earth)?

Try your own calculations with the drake equation. Work together in groups and estimate the factors in the drake equation, come up with your own value of N.

My value for N is _____.

$$\mathbf{N = R^* \times f_p \times n_e \times f_l \times f_i \times f_c \times L}$$

Drake's factors were:

- 1: The average number of stars to form per year in the galaxy.
- 2: The fraction of those stars that form planets.
- 3: The fraction of those planets that could support life.
- 4: The fraction of life-supporting planets that form life.
- 5: The fraction of those living planets that develop intelligent life forms.
- 6: The fraction of those intelligent life forms that develop technology.
- 7: The average lifetime of a communicating species; in other words how long a civilization will use radio technology, leaking signals into space for us to hear

According to the [Wikipedia entry for the Drake Equation](#), the following values were those used in the original formulation of the Drake Equation: $R = 10$ $f_p = 0.5$ $n_e = 2.0$ $f_l = 1.0$ $f_i = 0.01$ $f_c = 0.01$ $L = 10000$