

| R_* & f_p | $n_c = n_p \times f_s$ | f_l | f_i | f_c & L | Misc |
|------------------|------------------------|------------------|------------------|------------------|------------------|
| <u>10 Point</u> | <u>10 Point</u> | <u>10 Point</u> | <u>10 Point</u> | <u>10 Point</u> | <u>10 Point</u> |
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This Drake term is probably the most well known value.

What is the star formation rate (R_*)?

This early structure of the Solar System explains why the Solar System bodies all orbit the same way in the same plane.

**What is a
circumstellar
disk?**

**This will always be
created by a collapsing
cloud of gas and dust
with a little spin.**

**What is a
circumstellar
disk?**

**What physical condition
in the early Sun's disk
explains why there are
terrestrial planets, gas
giants, and ice giants.**

**What is
temperature?**

**This was the
surprising result
from the first
exoplanets detected.**

**What is Jupiter-
like planets
found close to
their star?**

**The proto-Earth
collided with a
Mars-sized
object and
created this.**

**What is the
Moon?**

**No atmosphere, no
oceans, hot, and no life
well describes the Earth
at this time.**

**What is the very
early Earth?**

**Although very
common today, this
element was not in
the first permanent
atmosphere of
Earth.**

What is oxygen?

**This is the region
around a star where
water can be in its
liquid form.**

**What is the
habitable zone?**

**We exclude massive
stars in our Drake
term f_s for this main
reason.**

**What is the
lifetime of a
massive star?**

**This is the monomer
of proteins.**

**What are amino
acids?**

**This legitimized the
scientific search for
the origins of life.**

**What is the Miller-Urey
experiment?**

**This is what is meant
in class by left-
handed life.**

**What is life that
uses left-handed
amino acids?**

**This is the most likely
transition to life
model.**

**What is the RNA
world?**

**All of the elements
heavier than iron
are forged in this
way?**

**What is a supernova
explosion?**

**The ability to model
the world, including
yourself.**

**What is the
definition of
intelligence?**

**This lifeform
oxygenated the
Earth's atmosphere 2
billion years ago.**

**What is
cyanobacteria?**

**This is the most
successful primate.**

**What are
humans?**

**Evolutionary, this
is why mutant sex
is good.**

**What is the
combination of
“good” or positive
mutations?**

**This is necessary to
estimate the age of
fossils over 60,000 yrs
old.**

**What is radioactive
dating of the
volcanic rocks
above and below the
fossil?**

**Extra-somatic
storage.**

**What is
information
stored outside of
the body?**

**Anatomically modern
humans for the last
100,000 yrs, this changed
our cultural evolution
10,000 yrs ago.**

**What is
agriculture?**

**Although energy will
always be important,
this structure could
capture most of the
energy of the Sun .**

**What is a Dyson
Sphere?**

**This will cause the Earth
to get hot (probably boil
the oceans) in only 1
billion years.**

**What is the
evolution of the
Sun?**

**These are the 3
Copernican
Revolutions.**

**What are: We are not the
center of the Solar
System, we are not the
center of the Galaxy,
and we are not the
center of the Universe?**

**This frequency band
contains arguably the
best frequencies to
search for
extraterrestrial
intelligence.**

What is 1-10 GHz?

**This message was
only sent once (3
mins long) and was
hard to decipher.**

**What is the Arecibo
Message?**

**These telescopes are
the most sensitive,
but have the
smallest field of
view.**

**What are big radio
telescopes?**

**Gwen, the twin of Ben,
travels near the speed
of light for a year, then
returns, which twin is
oldest now?**

Who is Ben?

**This document is the
only serious
scientific study of
UFOs.**

What is the Condon
Report?

Final Jeopardy

Make your wager

If $N > 8000$ and we want to
find the distance to the
nearest ET, then we can
assume that the Galactic
search volume is this.

What is a sphere?