

Fermi Questions



Comic Credit - XKCD #1050

This event will last 50 minutes. You may not use any resources other than your minds, writing instruments, and scratch paper – no calculators. Write answers, as usual, given only to their rounded power of 10, as is usual for the event (Answers are rounded at 5, not logarithmically). A reminder that answers like “5e6” or “e6” or “5*10⁶” will therefore be marked as wrong even if the true value is 5 million. Ties will be broken using this method:

1st tiebreak: Number of 5 point answers (more is better)

2nd tiebreak: Exam time (sooner you turn it in the better, but no rush!)

Good luck, and I hope you enjoy answering these questions as much as I enjoyed writing them.

- 1) What is the area of Madagascar, in square angstroms?
- 2) How tall, in feet, is the 22nd tallest building in the world?
- 3) What is 7^{43} ?
- 4) What is the mass of Mars in iPhone 5s?
- 5) How many Apps have been downloaded from Apple's iTunes Store?
- 6) How many different sets of 5 can you pick from a group of 50?
- 7) In 2004, how many people worldwide died in motor vehicle accidents?
- 8) How many seconds has it been since Thomas Jefferson was born?
- 9) How many stories tall is the tallest human ever to live?
- 10) How many atoms are in your body?
- 11) How many chicken wing segments were consumed during the 2013 Super Bowl?
- 12) How many bytes of digital information does humanity produce each day?
- 13) By contrast, what was the estimated size, in bytes, of the library of Congress in 1949?
- 14) If you were to count from one to a quintillion, and took a second to visualize each number (audibly counting would take a lot longer), how long would it take, in years?
- 15) How many kegs (as in beer) could you fill with the amount of liquid the average person drinks in a year?
- 16) Hurricane Sandy was devastating and expensive. If you had a pile of pennies equal in value to Sandy's cost, what would be its weight in troy ounces?
- 17) What is the distance, in nautical miles, from the dot to the stem on this: i
- 18) I travelled to Stone MS from UVA. How far, in megaparsecs, did I travel (assuming I stopped for coffee on the way)?
- 19) What is the population of the world's 70th most populous nation?
- 20) United Airlines is the largest airline in the world. How many planes comprise their fleet?
- 21) What is the average February high temperature in Washington DC, in °D?
- 22) The My Lai Massacre occurred on this date in 1968. According to the US army, how many people were killed?
- 23) How many automobiles had General Motors produced as of this date in 1968?
- 24) What fraction of earth's water supply is contained within living beings (all forms of life)?
- 25) Archimedes famously placed an upper bound on the number of grains of sand needed to fill the entire universe: One vigintillion. How many grains of sand did he suggest?