

CK Estimathon - 2025

1. How many islands does the country with most islands have? (267,570).
2. How many counties are there in Michigan? (83)
3. What is the Collatz number ($3n+1$ for odd, $n/2$ for even, # of steps to get 1) for 2025? (156)
4. From 2015 to 2024, calculate the sum of squares of # of days that the low temperature fell below 32 F (0 C) each year in Detroit Michigan. (123,645).
5. Suppose there were 20 random Cranbrook Students gathered in the math dungeon for a quiz. The probability that two or more share the same birthday can be represented as $\frac{1}{m}$. Estimate m. (2.433)
6. What is the probability that an integer chosen at random has no square divisors (other than 1) is $\frac{1}{n}$. Estimate n. (1.6449)
7. How many times should you fold a paper with thickness 0.01 mm to reach the moon? (45)
8. How many planetary moons orbit the 8 planets of the solar system? Exclude Pluto. (288)
9. How many ones are there if “20252025” is represented in binary? (12).
10. Estimate the sum of primes from 2025 to 4100625 (2025^2). (571,500,046,114)
11. From a geology perspective, we are part of the North American plate. How fast are we moving, in terms of meters per second? (7.28E-10)
12. How many possible configurations are there in a 3x3x3 rubik’s cube? Cubes are identical if they can be rotated in some way to look identical. (43,252,003,274,489,856,000)
13. Whew that was a lot! Now, what is the minimum number of moves (rotating faces) that guarantees a random cube to be solved (original configuration)? (20)

1. 267,570
2. 83
3. 156
4. 123,645
5. 2.433
6. 1.6449
7. 45
8. 288
9. 12
10. 571,500,046,114 (5.7E11)
11. 7.28E-10
12. 43,252,003,274,489,856,000 (4.3E19)
13. 20