

2013 CLIO INVITATIONAL FERMI TEST

Team #: _____ School Name: _____ Participants: _____

For each item, answer the quantity as the correct power of ten (exponent). For example, the number 1.4×10^6 (1,400,000), you would record 6 as your answer. If the number is 8.6×10^3 , you would record 4 as your answer. **No calculators, cell phones, or any type of resource allowed.**

Scoring:

5 points for the correct value

3 points ± 1 of the accepted value

1 point ± 2 of the accepted value

Ties are broken by counting the highest number of answers that receive five (5) points. If the number is the same, time is used as the second tiebreaker.

1. How many different types of proteins are in the human body?
2. How many different amino acids are?
3. How many hairs are on the average human head?
4. How many ml of saliva does a human produce in a lifetime?
5. How many red blood cells are in one human body?
6. How many toothpicks can be made from a cord of wood?
7. How many seconds does it take a dog to locate the direction of a sound?
8. How many taste buds are on a human tongue?
9. The diameter of a DNA molecule in inches.
10. How many base pairs are in one nucleus of one cell?
11. How many diapers are thrown out in the U.S. each year?
12. How many years is the $\frac{1}{2}$ life of Carbon-14?
13. How many years does it take for Styrofoam to biodegrade?
14. What is the amount of energy used in kWh for the average search query on Google?
15. How many gallons of gasoline are burned each day?
16. How many active volcanoes are on the surface of the earth?
17. What is the age of the Earth in seconds?
18. The number of Earths that would fit inside of the sun?
19. The approximate weight of a 150lb person if they were able to stand on the surface of the sun?

20. The number of years ago that Pangaea existed as a supercontinent?
21. The speed of the Earth in miles per hour that it travels through space?
22. $111,111,111^2$
23. How many pounds of food are eaten by one human in one lifetime?
24. The mass of the earth in tons?
25. How many ways can you make change for a dollar?
26. How many dimples are on a U.S. regulation golf ball?
27. How many times will you blink this year?
28. What is the speed of a sneeze in cm/s?
29. How many kilometers long is the Great Barrier Reef?
30. How many tons one cubic cm of a neutron star would be?
31. The speed of light in m/s.
32. Number of galaxies in the universe.
33. Pounds of skin shed by a person in his or her lifetime.
34. How many seconds would it take a heavy object to sink into the deepest part of the ocean?
35. The number of neutrinos that are produced from the sun that pass through your body while you read this sentence.
36. Number of miles the universe expands in one hour.
37. The number of words on this test.
38. The number of stars in our solar system.
39. Average number of seconds a Koala spends sleeping each day.
40. The number of atoms in one mole.

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Score:

Team #: _____ School Name: _____ Time to complete: _____

Participants: _____

Answer	Points awarded
1.	5 3 1 0
2.	5 3 1 0
3.	5 3 1 0
4.	5 3 1 0
5.	5 3 1 0
6.	5 3 1 0
7.	5 3 1 0
8.	5 3 1 0
9.	5 3 1 0
10.	5 3 1 0
11.	5 3 1 0
12.	5 3 1 0
13.	5 3 1 0
14.	5 3 1 0
15.	5 3 1 0
16.	5 3 1 0
17.	5 3 1 0
18.	5 3 1 0
19.	5 3 1 0
20.	5 3 1 0

Answer	Points awarded
21.	5 3 1 0
22.	5 3 1 0
23.	5 3 1 0
24.	5 3 1 0
25.	5 3 1 0
26.	5 3 1 0
27.	5 3 1 0
28.	5 3 1 0
29.	5 3 1 0
30.	5 3 1 0
31.	5 3 1 0
32.	5 3 1 0
33.	5 3 1 0
34.	5 3 1 0
35.	5 3 1 0
36.	5 3 1 0
37.	5 3 1 0
38.	5 3 1 0
39.	5 3 1 0
40.	5 3 1 0

Answers for Clio Fermi Test

1.	5
2.	1
3.	5
4.	7
5.	13
6.	7
7.	-3
8.	4
9.	-4
10.	10
11.	10
12.	4
13.	4
14.	-4
15.	9
16.	3
17.	17
18.	6
19.	3
20.	8
21.	5
22.	16
23.	5
24.	22
25.	2
26.	2
27.	7
28.	5
29.	3
30.	8
31.	8
32.	11
33.	1
34.	3
35.	15
36.	9
37.	3
38.	0
39.	5
40.	24