

2012 VASO Regional Tournament Fermi Questions

Time: 50 Minutes **Resources:** Only pencils allowed. NO calculators, reference sheets, rulers etc. are permitted. Please write your answers in the provided response sheet. Your combined score on **Questions 38-40** will serve as a **tiebreaker**.

1. How many seconds will it take to fully and quickly write out the number of 1 google if you were not allowed to use scientific notation?
2. How many feet above sea level is the highest point of Florida?
3. How many square miles are the 48 contiguous U.S. states?
4. How many people in the U.S. are unemployed?
5. What is the population density (people per square mile) in the country of Mali?
6. How many miles are between Stockholm and Paris?
7. How many toothpicks are required to cover a baseball diamond if the tooth picks are lying flat and side-by-side?
8. What is the maximum weight, in tons, of a Giant Sequoia tree?
9. How many 7-11 stores are there in Virginia?
10. How many babies are born each year in the world?
11. How many stone blocks were used to build the pyramid at Giza?
12. How many milk cows are in the U.S.?
13. How many steps does the average American walk during their lifetime?
14. How many dollar bills would need to be stacked to reach the moon?
15. How many tennis balls does it take to cover the playing surface of a tennis court (including the doubles alley)?
16. What is the maximum speed of the garden snail in mph?
17. How many metric tons of fish are caught in the country of Jordan each year?
18. How many decimeters deep is the Marianas Trench?
19. How many liters of water are there is an Olympic-sized swimming pool?
20. How many federal, state, and local governmental employees are there in the U.S.?
21. How many popular votes separated Obama and McCain during the 2008 presidential election?
22. How many car miles were avoided in 2010 by buses that took kids to school?
23. What is the volume of the average adult in dekaliters?
24. If the annual interest that is owed on the national debt each year were divided equally amongst all U.S. citizens, how much would each citizen owe?
25. How many troy ounces of gold were produced last year?
26. How many earths are needed to have the equivalent weight of one Sun?
27. How many gas stations are there in the U.S.?
28. How many golf balls will fit in a 747?
29. How many cups of coffee does Starbucks sell each year?
30. How many watts of solar power are/were produced in the U.S. today at noon?
31. How many stars are in the Milky Way Galaxy?
32. How many kilometers does light travel between two consecutive visits of Haley's comet?
33. How many electrons flow through a 3 Amp wire each minute?
34. How many milligrams does the earth weigh?
35. What percent of the world's water is in rivers?
36. How many farms are there in Virginia?
37. How many miles of railroad are operational in the U.S.?
38. How many different species of spiders and scorpions are there in the world?
39. How many cells die naturally (apoptosis) in your body during the time that it takes you to solve the average Fermi problem?
40. How many joules does the sun emit per second?

2012 VASO Regional Tournament Fermi Questions Response Sheet

School Name: _____ **Team Number:** _____

Student Names: _____

Please enter your responses below -

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

2012 VASO Regional Tournament Fermi Questions ANSWER KEY

The combined score on **Questions 38-40** will serve as a **tiebreaker**.

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