

TEST NAME: **NAMSCM1314EE.3**  
TEST ID: **129997**  
GRADE: **08**  
SUBJECT: **Mathematics**  
TEST CATEGORY: **My Classroom**

Student: \_\_\_\_\_

Class: \_\_\_\_\_

Date: \_\_\_\_\_

1. A virus has a diameter of about  $2.0 \times 10^{-8}$  mm. A bacteria has a diameter of about  $2.0 \times 10^{-6}$  mm. How does the size of the bacteria compare to the size of the virus?
  - A. The bacteria is about 10 times smaller.
  - B. The bacteria is about 10 times larger.
  - C. The bacteria is about 100 times smaller.
  - D. The bacteria is about 100 times larger.
  
2. How is the number 0.0058 written in scientific notation?
  - A.  $58 \times 10^4$
  - B.  $5.8 \times 10^3$
  - C.  $58 \times 10^{-4}$
  - D.  $5.8 \times 10^{-3}$
  
3. What is 0.0000085 written in scientific notation?
  - A.  $8.5 \times 10^{-5}$
  - B.  $8.5 \times 10^{-6}$
  - C.  $8.5 \times 10^{-7}$
  - D.  $8.5 \times 10^{-8}$
  
4. How is the number 42,600,000 written in scientific notation?
  - A.  $4.26 \times 10^5$
  - B.  $4.26 \times 10^6$
  - C.  $4.26 \times 10^7$
  - D.  $4.26 \times 10^8$

5. How is the product of  $0.1 \times 0.0001$  written in scientific notation?
- A.  $1 \times 10^{-5}$
  - B.  $1 \times 10^{-3}$
  - C.  $1 \times 10^3$
  - D.  $1 \times 10^5$
6. Scientists have discovered evidence of three new black holes within 50 million light years of Earth. Which shows 50 million written in scientific notation?
- A.  $5 \times 10^6$
  - B.  $5 \times 10^7$
  - C.  $5 \times 10^9$
  - D.  $5 \times 10^{10}$
7. A jet fighter is capable of reaching speeds up to  $1.5 \times 10^3$  miles per hour. A typical passenger plane can reach speeds of approximately  $5.0 \times 10^2$  miles per hour. **About** how many times faster can the jet fighter travel per hour than the typical passenger plane?
- A. 3
  - B. 10
  - C. 30
  - D. 75
8. Mercury is about  $3.6 \times 10^7$  miles from the Sun. Venus is about  $6.7 \times 10^7$  miles from the Sun. **About** how many times farther is Venus from the Sun than Mercury?
- A. 1.5
  - B. 2
  - C. 2.5
  - D. 3

9. The measure of a virus is 0.000085 cm. How is the measure of the virus written in scientific notation?
- A  $8.5 \times 10^5$
  - B  $8.5 \times 10^{-4}$
  - C  $8.5 \times 10^{-5}$
10. Which set of numbers is ordered from least to greatest?
- A  $5.3 \times 10^4$ ;  $2.3 \times 10^5$ ; 275,000
  - B  $2.3 \times 10^5$ ; 275,000;  $5.3 \times 10^4$
  - C 275,000;  $2.3 \times 10^5$ ;  $5.3 \times 10^4$
  - D 275,000;  $5.3 \times 10^4$ ;  $2.3 \times 10^5$
11. Jupiter is about 480 million miles from the Sun. How is this distance written in scientific notation?
- A  $4.8 \times 10^6$  miles
  - B  $4.8 \times 10^7$  miles
  - C  $4.8 \times 10^8$  miles
12. The diameter of a carbon atom is about  $1.0 \times 10^{-10}$  meters. The diameter of a hydrogen atom is about  $5.3 \times 10^{-11}$  meters. **About** how many times larger is the diameter of the carbon atom than the diameter of the hydrogen atom?
- A 2
  - B 5
  - C 20
  - D 50

13. Mike is about 1.6 meters tall. A rock is about  $2.3 \times 10^{-3}$  meters tall. **About** how many times shorter is the rock compared to Mike?
- A 1,400
  - B 700
  - C 140
  - D 70
14. In 2005, about 3.1 billion books were sold in the United States. How is the number of books sold written in scientific notation?
- A  $3.1 \times 10^6$
  - B  $3.1 \times 10^7$
  - C  $3.1 \times 10^8$
  - D  $3.1 \times 10^9$
15. How is 312,000,000 expressed in scientific notation?
- A  $3.12 \times 10^9$
  - B  $3.12 \times 10^8$
  - C  $3.12 \times 10^7$
  - D  $3.12 \times 10^6$
16. A field is  $1.2 \times 10^3$  yards long. A garden in the field is  $0.4 \times 10^2$  yards long. How many times shorter is the length of the garden than the length of the field?
- A 3
  - B 8
  - C 30
  - D 80

17. What is the standard form of  $4.63 \times 10^4$  ?
- A. 4,630
  - B. 46,300
  - C. 463,000
  - D. 4,630,000
18. How is 0.000068 written in scientific notation?
- A.  $6.8 \times 10^{-4}$
  - B.  $6.8 \times 10^{-5}$
  - C.  $6.8 \times 10^{-6}$
  - D.  $6.8 \times 10^{-7}$
19. The population of City M is about  $3.3 \times 10^5$ . The population of City N is about  $1.7 \times 10^6$ . **Approximately** how many times larger is the population of City N than the population of City M?
- A. 2
  - B. 5
  - C. 20
  - D. 50
20. What is  $8.34 \times 10^5$  in standard form?
- A. 83,400,000
  - B. 834,000
  - C. 83,400
  - D. 0.0000834

21. The number of fish in Lake Bass is about  $1.2 \times 10^6$ . The number of fish in Lake Simon is about  $6 \times 10^3$ . How much larger is the number of fish in Lake Bass than the number of fish in Lake Simon?
- A. 2 times larger
  - B. 20 times larger
  - C. 200 times larger
22. The population of Smithville is about  $2.6 \times 10^5$ . The population of Jonesville is about  $1.04 \times 10^6$ . **About** how many times larger is the population of Jonesville than Smithville?
- A. 2 times larger
  - B. 4 times larger
  - C. 10 times larger
  - D. 20 times larger
23. The distance from the Sun to Earth is  $1.6 \times 10^{11}$  meters and the distance from Mars to Earth is  $5.5 \times 10^{10}$  meters. **About** how many times farther is the distance from the Sun to Earth than the distance from Mars to Earth?
- A. 2
  - B. 3
  - C. 20
  - D. 30
24. What is the standard form of  $9.12 \times 10^6$ ?
- A. 912,000,000
  - B. 91,200,000
  - C. 9,120,000
  - D. 912,000

25. The population of Griffin is about  $4.8 \times 10^3$ . The population of Oakdale is about  $1.9 \times 10^5$ . **About** how many times larger is the population of Oakdale than Griffin?
- A. 4
  - B. 25
  - C. 40
  - D. 250
26. What is  $6.7 \times 0.00065$  expressed in scientific notation?
- A.  $4.355 \times 10^{-3}$
  - B.  $4.355 \times 10^{-2}$
  - C.  $4.355 \times 10^3$
  - D.  $4.355 \times 10^6$
27. The average distance from Jupiter to the Sun is about  $7.784 \times 10^8$  km. How should this distance be written in standard form?
- A. 778,400,000,000 km
  - B. 7,784,000,000 km
  - C. 778,400,000 km
  - D. 77,840,000 km
28. An adult red panda weighs about  $5.0 \times 10^3$  grams. An adult giant panda weighs about  $1.5 \times 10^5$  grams. **About** how many times larger is the giant panda than the red panda?
- A. 2
  - B. 3
  - C. 20
  - D. 30



29. Which number is equivalent to  $1.89 \times 10^7$ ?
- A. 1,890,000
  - B. 18,900,000
  - C. 189,000,000
  - D. 1,890,000,000
30. How is 57,900,000 written in scientific notation?
- A.  $5.79 \times 10^8$
  - B.  $5.79 \times 10^7$
  - C.  $5.79 \times 10^6$
  - D.  $5.79 \times 10^5$
31. Light travels about 300,000 km per second. How is this speed written in scientific notation?
- A.  $3.0 \times 10^3$  km per second
  - B.  $3.0 \times 10^4$  km per second
  - C.  $3.0 \times 10^5$  km per second
  - D.  $3.0 \times 10^6$  km per second
32. The average distance from Pluto to the sun is about  $3.7 \times 10^9$  miles. What is this distance written in standard form?
- A. 37,000,000
  - B. 370,000,000
  - C. 3,700,000,000
  - D. 37,000,000,000
33. What is the standard form of  $3.2 \times 10^{-3}$ ?
- A. -3,200
  - B. 0.00032
  - C. 0.0032

34. Which is equivalent to 0.0043?
- A  $4.3 \times 10^{-3}$
  - B  $4.3 \times 10^{-2}$
  - C  $4.3 \times 10^3$
35. The population of the town of Fair Bluff is approximately  $9.8 \times 10^4$ . The population of Tabor City is approximately  $2.5 \times 10^4$ . **About** how many times larger is Fair Bluff than Tabor City?
- A 4 times larger
  - B 5 times larger
  - C 10 times larger
36. What is  $3.024 \times 10^{-4}$  written in standard form?
- A -30,240
  - B -3,024
  - C 0.00003024
  - D 0.0003024
37. In 2008, a computer software company had approximately  $1.4 \times 10^6$  dollars in revenue. In 2010, the company's revenue was approximately  $1.2 \times 10^8$  dollars. **About** how many times more revenue did the company make in 2010 than in 2008?
- A 8.6
  - B 86
  - C 860
  - D 8,600

38. Sam is 1.75 meters tall. His pet turtle is  $1.6 \times 10^{-1}$  meters tall. **About** how many times taller is Sam than his turtle?
- A 2 times taller
  - B 11 times taller
  - C 110 times taller
39. Which is equivalent to 0.00025?
- A  $2.5 \times 10^{-3}$
  - B  $2.5 \times 10^{-4}$
  - C  $2.5 \times 10^{-5}$
40. Neptune is approximately 4,400,000,000 km from the Earth. How is this number written in scientific notation?
- A  $4.4 \times 10^7$
  - B  $4.4 \times 10^8$
  - C  $4.4 \times 10^9$
  - D  $4.4 \times 10^{10}$
41. The speed of light is about  $3.0 \times 10^8$  meters per second. The speed of sound at sea level is about  $3.0 \times 10^2$  meters per second. **About** how many times faster is the speed of light than sound?
- A 1,000
  - B 6,000
  - C 1,000,000
  - D 3,000,000
42. What is the standard form of  $7.95 \times 10^8$ ?
- A 795,000,000
  - B 7,950,000,000
  - C 79,500,000,000

43. The driving distance from Raleigh, NC to Los Angeles, CA is about 2,500 miles. How is this distance written in scientific notation?
- A  $2.5 \times 10^2$  miles
  - B  $2.5 \times 10^3$  miles
  - C  $2.5 \times 10^4$  miles

44. The masses of three planets are shown in the table below.

<b>Planet</b>	<b>Mass (kg)</b>
Venus	$4.87 \times 10^{24}$
Earth	$5.98 \times 10^{24}$
Mars	$6.42 \times 10^{23}$

Which shows the planets ordered from greatest to least mass?

- A Earth, Venus, Mars
  - B Venus, Earth, Mars
  - C Mars, Earth, Venus
  - D Mars, Venus, Earth
45. The average distance from Mars to the sun is 228 million km. How is this distance written in scientific notation?
- A  $2.28 \times 10^9$
  - B  $2.28 \times 10^8$
  - C  $2.28 \times 10^7$
  - D  $2.28 \times 10^6$
46. A speck of dust has a diameter of 675 ten-millionths centimeters. How is this diameter expressed in scientific notation?
- A  $6.75 \times 10^{-4}$  centimeters
  - B  $6.75 \times 10^{-5}$  centimeters
  - C  $6.75 \times 10^{-6}$  centimeters
  - D  $6.75 \times 10^{-7}$  centimeters

47. How is  $3.25 \times 10^6$  written in standard form?
- A 3,250,000
  - B 32,500,000
  - C 325,000,000
48. A book is about  $9.3 \times 10^{-2}$  meters thick. A bookshelf is about  $1.865 \times 10^1$  meters long. **About** how many copies of this book will fit on the bookshelf?
- A 17 books
  - B 20 books
  - C 200 books
  - D 498 books
49. A company had 21 billion dollars in sales last year. What are the sales of the company written in scientific notation?
- A  $2.1 \times 10^7$
  - B  $2.1 \times 10^9$
  - C  $2.1 \times 10^{10}$
50. What is 0.000426 in scientific notation?
- A  $4.26 \times 10^{-3}$
  - B  $4.26 \times 10^{-4}$
  - C  $4.26 \times 10^{-5}$
  - D  $4.26 \times 10^{-6}$
51. What is the standard form of  $3.01 \times 10^4$ ?
- A 0.0000301
  - B 0.000301
  - C 30,100
  - D 3,010,000

52. A very powerful microscope can see items approximately  $1 \times 10^{-6}$  m in size. What is the standard form of this number?
- A 1,000,000
  - B 0.000001
  - C  $-1,000,000$
53. The average depth of an ocean is approximately  $1.2 \times 10^4$  feet. How is this depth written in standard form?
- A 120,000 feet
  - B 12,000 feet
  - C 1,200 feet
  - D 120 feet
54. What is 0.036 expressed in scientific notation?
- A  $3.6 \times 10^{-2}$
  - B  $3.6 \times 10^{-1}$
  - C  $3.6 \times 10^1$
  - D  $3.6 \times 10^2$