

TEST BANK

KARL J. SMITH

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MATH

WHAT'S INSIDE:

A Student-Tested, Faculty-Approved
Approach to Learning
Liberal Arts Mathematics

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Sm.MATH.ch01sec02

Student: _____

1. $9 + 7 \cdot 2 = 23$

True False

2. $18 - 1 + 7 = 24$

True False

3. $136 - 8 \cdot 17 = 8$

True False

4. $27 \div 9 \cdot 4 = 12$

True False

5. $12 \div 4 + 6 = 9$

True False

6. $8 \cdot 1 + 5 \cdot 3 = 23$

True False

7. $8 \cdot 10 + 7 \cdot 5 = 115$

True False

8. $5 \cdot 2 + 5 \cdot 11 - 19 = 46$

True False

9. $7(4) - 3(6) = 12$

True False

10. $5(8 + 3) + 6 = 60$

True False

11. Use the distributive property to evaluate the expression.

$6(8 + 4)$

- A. 38
- B. 52
- C. 18
- D. 72
- E. 32

12. Use the distributive property to evaluate the expression.

$7 + 15 \cdot 10 \div 5$

- A. 162
- B. 757
- C. 37
- D. 157
- E. 44

13. Translate the word statement to a numerical statement.

Seven times the difference of 6 and 2

A. $7 \cdot 6 - 2$

$7(2 - 6)$

B.

$7 \cdot \frac{6}{2}$

C.

$7(6 - 2)$

D.

E. none of these

14. Translate the word statement to a numerical statement.

Eight times the difference of 4 from 5

$$8 \cdot \frac{5}{4}$$

- A. $8(5-4)$
- B. $8 \cdot 5 - 4$
- C. $8 \cdot 4 - 5$
- D. $8(4-5)$
- E.

15. Evaluate the following expression.

$$(5+15)(58-8)$$

- A. 70
- B. 1,000
- C. 867
- D. 1,152
- E. none of these

16. Evaluate the following expression.

$$58 - 2[30 - (7 + 5)]$$

- A. 1,008
- B. 10
- C. 2
- D. 22
- E. 1,568

17. A student pays \$311 rent each month. How much money does she spend on rent in 2 years?

- A. \$622
- B. \$652
- C. \$7,775
- D. \$7,474
- E. \$7,464

18. A family has an annual income of \$25,560. How much is their monthly income?

- A. \$2,254
- B. \$2,130
- C. \$2,352
- D. \$1,686
- E. none of these

19. A family has an annual income of \$47,840. How much is their hourly income?

- A. \$20
- B. \$25
- C. \$23
- D. \$30
- E. none of these

20. A car with a tank that holds 20 gallons of gasoline goes 42 miles on one gallon. How far can the car go on a full tank?

- A. 840 mi
- B. 830 mi
- C. 850 mi
- D. 845 mi
- E. 835 mi

21. In what notation is the number 294.736 written?

- A. scientific notation
- B. decimal notation
- C. both scientific and decimal notations

22. Consider the exponential expression.

$$7^4$$

Which of the following numbers is the base?

- A. 2,401
- B. 4
- C. 28
- D. 7
- E. none of these

23. Write 600,000 in scientific notation.

A. 6×10^4

B. 12×10^6

C. 6×10^6

D. 12×10^{11}

E. 6×10^5

24. Write 3.1×10^4 in standard notation.

A. 3,100

B. 31,000

C. 310,000

D. 0.00031

E. none of these

25. Write the number 7.9×10^5 without using exponents.

A. 79,000

B. 79,000,000

C. 7,900,000

D. 0.000079

E. 790,000

26. Write 6.2×10^{-3} without using exponents.

A. 0.062

B. 0.00062

C. 0.000062

D. 0.0062

E. 6,200

27. Evaluate the following exponential expression.

5^2

A. 6

B. 125

C. 36

D. 5

E. 25

28. Write the following expression without using exponents.

$$7^3$$

A. $7 \cdot 7 \cdot 7 \cdot 7$

B. $3 \cdot 3 \cdot 3 \cdot 3$

C. $7 \cdot 7$

D. $7 \cdot 7 \cdot 7$

E. $3 \cdot 3 \cdot 3 \cdot 3 \cdot 3 \cdot 3 \cdot 3$

29. Factor the number 125 into a product of prime factors.

A. $5 \cdot 3$

B. 5^3

C. 5^2

D. $5 \cdot 7$

E. None of these

30. Factor the number 70 into a product of prime factors.

A. $2 \cdot 35$

B. $2 \cdot 7$

C. $2 \cdot 5 \cdot 7$

D. $5 \cdot 7$

E. None of these

31. Find the prime factors of 33 and 385. What prime factor do they have in common?

A. 11

B. 33

C. 3

D. 7

E. 5

32. Write 70 in prime-factored form.

A. $7 \cdot 3 \cdot 5$

B. $1 \cdot 5 \cdot 7$

C. $8 \cdot 2 \cdot 5$

D. $2 \cdot 7 \cdot 5$

E. $2 \cdot 7 \cdot 6$

33. Write 50,625 in prime-factored form.

- A. $3^5 \cdot 6^4$
- B. $3^5 \cdot 5^5$
- C. $3^5 \cdot 5^4$
- D. $3^4 \cdot 5^4$
- E. $3^4 \cdot 6^5$

34. Factor the number 24,389 into a product of prime factors.

- A. 29^3
- B. $29 \cdot 7$
- C. 29^2
- D. 37^3
- E. None of these

35. The largest ocean in the world is the Pacific Ocean, which covers approximately 6.36×10^7 square miles. Express this number without using exponents.

- A. 636,000 square miles
- B. 6,360,000 square miles
- C. 636,000,000 square miles
- D. 63,600,000 square miles
- E. 6,360,000,000 square miles

36. The distance from earth to a certain star outside our solar system is 26,500,000,000,000 miles. Express this number in scientific notation.

- A. 26.5×10^{-12} miles
- B. 26.5×10^{11} miles
- C. 26.5×10^{12} miles
- D. 2.65×10^{-13} miles
- E. 2.65×10^{13} miles

37. At a certain temperature, the speed of sound in air is approximately 3.29×10^4 centimeters per second. Use scientific notation to express this speed in kilometers per second. (Hint: 100 centimeters = 1 meter and 1,000 meters = 1 kilometer.)

- A. 3.29×10^3 kilometers per second
- B. 3.29×10^{-1} kilometers per second
- C. 3.29×10^{-5} kilometers per second
- D. 3.29×10^1 kilometers per second
- E. 3.29×10^9 kilometers per second

38. The mass of one proton is approximately 1.7×10^{-24} gram. Use scientific notation to express the mass of 1,000,000 protons.

- A. 1.7×10^{-12} gram
- B. 1.7×10^{-30} gram
- C. 1.7×10^{-10} gram
- D. 1.7×10^{-15} gram
- E. 1.7×10^{-18} gram

39. Russia is believed to have oil reserves of about 4.9×10^{11} barrels. A barrel contains 42 gallons of oil. Use scientific notation to express Russia's oil reserves in gallons.

- A. 2.058×10^{15} gallons
- B. 2.058×10^{13} gallons
- C. 2.058×10^{14} gallons
- D. 2.058×10^{11} gallons
- E. 2.058×10^{12} gallons

40. A family has an annual income of \$30,960. How much is their monthly income?

\$ _____ per month

41. A family has an annual income of \$20,800. How much is their hourly income?

\$ _____ per hour

42. A car with a tank that holds 13 gallons of gasoline goes 49 miles on one gallon. How far can the car go on a full tank?

_____ miles

43. Evaluate the following expression.

$$3 + 5 \cdot 2$$

44. Evaluate the following expression.

$$12 - 1 + 19$$

45. Evaluate the following expression.

$$48 - 4 \cdot 12$$

46. Evaluate the following expression.

$$15 \div 3 \cdot 8$$

47. Simplify the following expression.

$$15 \div 5 + 4$$

48. Simplify the following expression.

$$14 \cdot 1 + 4 \cdot 3$$

49. Simplify the following expression.

$$4 \cdot 6 + 7 \cdot 5$$

50. Use the distributive property to evaluate the expression.

$$8(3 + 9)$$

51. Use the distributive property to evaluate the expression.

$$8 + 15 \cdot 4 \div 5$$

52. Simplify the following expression.

$$2 \cdot 9 + 2 \cdot 6 - 14$$

53. Evaluate the following expression.

$$5(7) - 3(4)$$

54. Evaluate the following expression.

$$(6 + 14)(44 - 4)$$

55. Evaluate the following expression.

$$8(4 + 7) + 9$$

56. Evaluate the following expression.

$$44 - 9[17 - (9 + 4)]$$

57. A student pays \$430 rent each month. How much money does she spend on rent in 4 years?

\$ _____

58. Write the following number without using exponents. (Multiply out.)

$$6.5 \times 10^5$$

59. Write the following number without using exponents. (Multiply out.)

$$3.7 \times 10^3$$

60. Write the following number without using exponents. (Multiply out.)

$$5 \times 10^{-5}$$

61. Write the following number without using exponents. (Multiply out.)

$$7^2$$

62. Write the following number without using exponents. (Multiply out.)

$$5^3$$

63. Find the prime factors of 15 and 70. What prime factor do they have in common?

64. The largest ocean in the world is the Pacific Ocean, which covers approximately 6.35×10^7 square miles. Express this number without using exponents.

_____ square miles

65. Match each notation below with the letter of the corresponding number.

1. standard decimal notation

$16 \cdot 10^{18}$

2. scientific notation

5,659,500

66. Consider the exponential expression 6^9 .

Match each description below with the letter of the corresponding number.

exponent

1.

9

2. base

6

67. Translate the word statement to a numerical statement.

Nine times the difference of 6 and 4

68. Translate the word statement to a numerical statement.

Seven times the difference of 3 from 5

69. Write the following number in scientific notation.

7,000,000

70. Find the prime factorization for the following number. If a factor is repeated, write it with exponents.

125

71. Find the prime factorization for the following number. If a factor is repeated, write it with exponents.

105

72. Find the prime factorization for the following number. If a factor is repeated, write it with exponents.

165

73. Find the prime factorization for the following number. If a factor is repeated, write it with exponents.

50,625

74. Find the prime factorization for the following number. If a factor is repeated, write it with exponents.

79,507

75. The distance from earth to a certain star outside our solar system is 25,800,000,000,000 miles. Express this number in scientific notation.

76. At a certain temperature, the speed of sound in air is approximately 3.55×10^4 centimeters per second. Use scientific notation to express this speed in kilometers per second.

Hint: 100 centimeters = 1 meter and 1,000 meters = 1 kilometer.

77. The mass of one proton is approximately 1.7×10^{-24} gram. Use scientific notation to express the mass of 1,000,000 protons.

78. Iran is believed to have oil reserves of about 3.6×10^{11} barrels. A barrel contains 42 gallons of oil. Use scientific notation to express Iran's oil reserves in gallons.

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TRUE

2. $18 - 1 + 7 = 24$

TRUE

3. $136 - 8 \cdot 17 = 8$

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4. $27 \div 9 \cdot 4 = 12$

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- B. 1.7×10^{-30} gram
- C. 1.7×10^{-10} gram
- D. 1.7×10^{-15} gram
- E.** 1.7×10^{-18} gram

39. Russia is believed to have oil reserves of about 4.9×10^{11} barrels. A barrel contains 42 gallons of oil. Use scientific notation to express Russia's oil reserves in gallons.

- A. 2.058×10^{15} gallons
- B.** 2.058×10^{13} gallons
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\$ _____
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_____ square miles
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1. standard decimal notation

$16 \cdot 10^{18}$ 2

2. scientific notation

5,659,500 1

66. Consider the exponential expression 6^9 .

Match each description below with the letter of the corresponding number.

_____ exponent

1.

9 1

2. base

6 2

67. Translate the word statement to a numerical statement.

Nine times the difference of 6 and 4

$$9(6 - 4)$$

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