

Exponents and Multiplying Monomials 1

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

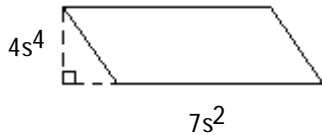
Multiply.

1) $(-4y)(-9y^9)$ 1) _____
 A) $-13y^9$ B) $36y^{10}$ C) $4y - 9y^9$ D) $-36y^{10}$

2) $(-5p^2r)(5p^2qr^5)(-3q^5r^2)$ 2) _____
 A) $-75p^3q^7r^8$ B) $75p^4q^6r^8$ C) $-75p^4q^6r^8$ D) $75p^3q^7r^8$

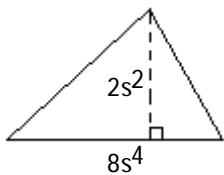
Solve the problem.

3) Write an expression in simplest form for the area of the shape. 3) _____



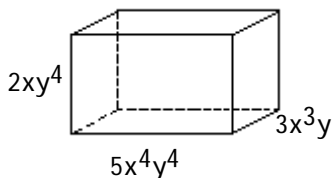
A) $14s^8$ B) $28s^6$ C) $28s^8$ D) $14s^6$

4) Write an expression in simplest form for the area of the shape. 4) _____



A) $16s^8$ B) $8s^8$ C) $16s^6$ D) $8s^6$

5) Write an expression in simplest form for volume. 5) _____



A) $30x^{24}y^{27}$ B) $30x^{12}y^{48}$ C) $30x^8y^9$ D) $90x^7y^5$

Multiply and write the answer in scientific notation.

6) $(2.6 \times 10^{-5})(1.8 \times 10^{-9})$ 6) _____
 A) 4.68×10^{14} B) 4.68×10^{-4} C) 4.4×10^{14} D) 4.68×10^{-14}

Simplify.

7) $(-0.9r^2s^9t^3)^4$ 7) _____
 A) $3.6r^2s^9t^{12}$ B) $-0.6561r^8s^{36}t^{12}$ C) $-0.9r^6s^{13}t^7$ D) $0.6561r^8s^{36}t^{12}$

8) $(-3xy^4)^3$ 8) _____
 A) $27x^3y^{12}$ B) $-27x^3y^{12}$ C) $-9xy^7$ D) $9xy^7$

9) $(2x^7)^4(3x^4y^9)$
A) $48x^{32}y^9$

B) $6xy^{32}$

C) $46x^{31}y^8$

D) $6x^{23}y^9$

9) _____

10) $\left(-\frac{1}{2}xy^6z^8\right)^2\left(\frac{1}{2}x^8y^6z\right)^2$

A) $\frac{1}{4}x^{11}y^{14}z^{11}$

B) $\frac{1}{16}x^{11}y^{14}z^{11}$

C) $-\frac{1}{4}x^{18}y^{24}z^{18}$

D) $\frac{1}{16}x^{18}y^{24}z^{18}$

10) _____

Solve the problem. Express the answer in scientific notation to two decimals unless requested otherwise.

11) The national debt of a small country is \$ 7,100,000,000 and the population is 2,915,000. What is the amount of debt per person?

11) _____

A) \$ 24.36

B) $\$ 2.44 \times 10^3$

C) $\$ 2.44 \times 10^6$

D) \$ 2.44

12) Assume that the volume of the earth is 5×10^{14} cubic meters and the volume of a bacterium is 2.5×10^{-16} cubic meters. If the earth could be filled with bacteria, how many would it contain? (Round to one decimal place.)

12) _____

A) 5.0×10^{-31} bacteria

B) 2.0×10^{30} bacteria

C) 2.0×10^{-30} bacteria

D) 5.0×10^{31} bacteria

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Provide an appropriate response.

13) Find and explain the mistake(s); then work the problem correctly.

13) _____

$(-4mn^5)^7 = -28m^7n^{12}$

14) Find and explain the mistake(s); then work the problem correctly.

14) _____

$-3x^2y \cdot 7x^{10}y^9 = -21x^{20}y^9$

Answer Key

Testname: EXPONENT RULES AND MULTIPLYING MONOMIALS1

- 1) B
- 2) B
- 3) B
- 4) D
- 5) C
- 6) D
- 7) D
- 8) B
- 9) A
- 10) D
- 11) B
- 12) B
- 13) Explanations will vary. The correct answer is $-16,384m^7n^{35}$.
- 14) Explanations will vary. The correct answer is $-21x^{12}y^{10}$.