

Exponents and Multiplying 3

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

Evaluate the exponential form.

1) 8^0 1) _____
A) 8 B) -1 C) 1 D) 0

2) $(0.9)^4$ 2) _____
A) 0.6561 B) 6561 C) 3.6 D) 0.225

Rewrite the expression with positive exponents then, if the expression is numeric, evaluate it.

3) x^{-5} 3) _____
A) x^5 B) $\frac{1}{x^5}$ C) $\frac{1}{x^{-5}}$ D) $5x$

4) -5^{-2} 4) _____
A) -25 B) $\frac{1}{10}$ C) 25 D) $-\frac{1}{25}$

5) $(0.01)^{-3}$ 5) _____
A) 1,000,000 B) - 0.000001 C) - 1,000,000 D) 10,000,000

Evaluate the expression. Round to five decimal places when necessary.

6) $\left(\frac{1}{4}\right)^{-3}$ 6) _____
A) 64 B) $\frac{1}{12}$ C) -64 D) $\frac{1}{64}$

7) $(16.4)^{-2}$ 7) _____
A) 0.00372 B) 268.96 C) 4.04969 D) 32.8

Write the number in standard form.

8) A computer can do one calculation in 1.4×10^{-7} seconds. 8) _____
A) 14,000,000 B) 0.00000014 C) 0.000000014 D) 0.000014

Provide an appropriate response.

9) Rank the numbers in order from smallest to largest. 9) _____

- 4.19×10^2 , 3.76×10^5 , 5.44×10^{-2} , 5.25×10^2 , 3.19×10^{-5}
- A) $3.76 \times 10^5 < 5.25 \times 10^2 < 4.19 \times 10^2 < 5.44 \times 10^{-2} < 3.19 \times 10^{-5}$
B) $5.44 \times 10^{-2} < 3.19 \times 10^{-5} < 4.19 \times 10^2 < 5.25 \times 10^2 < 3.76 \times 10^5$
C) $3.19 \times 10^{-5} < 5.44 \times 10^{-2} < 4.19 \times 10^2 < 5.25 \times 10^2 < 3.76 \times 10^5$
D) $3.19 \times 10^{-5} < 4.19 \times 10^2 < 5.25 \times 10^2 < 3.76 \times 10^5 < 5.44 \times 10^{-2}$

10) Tell whether or not the number is given in scientific notation. 10) _____

- 16.39×10^{15}
- A) Yes B) No

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Math Connections

11) Determine if the expression $(-3)^{-10}$ is positive or negative.

A) Positive

B) Negative

11) _____

Write the number in scientific notation.

12) The frequency of a vibration was about 1000 Hz.

A) 1×10^4

B) 1×10^2

C) 1×10^3

D) 1×10^5

12) _____

Write the number in standard form.

13) The signal frequency was set to 1.35×10^6 Hz.

A) 135,000

B) 81

C) 1,350,000

D) 13,500,000

13) _____

Multiply.

14) $(-4y)(-9y^9)$

A) $-13y^9$

B) $36y^{10}$

C) $-36y^{10}$

D) $4y - 9y^9$

14) _____

15) $(-4m^3z^4)(2m^2z^2)$

A) $-8mz^6$

B) $-8mz^5$

C) $-8m^5z^6$

D) $-8m^6z^5$

15) _____

16) $5x^8 \left(\frac{1}{10}xyz \right) \left(-\frac{2}{3}y^2z^2 \right)$

A) $-\frac{1}{15}x^8y^3z^3$

B) $-\frac{1}{3}x^8y^2z^2$

C) $\frac{1}{6}x^9y^2z^2$

D) $-\frac{1}{3}x^9y^3z^3$

16) _____

Simplify.

17) $(3x^5)^4$

A) $3x^9$

B) $81x^{19}$

C) $81x^{20}$

D) $81x^5$

17) _____

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

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

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

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

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

18) _____

Answer Key

Testname: EXPONENT RULES AND MULTIPLYING MONOMIALS3.TMP

- 1) C
- 2) A
- 3) B
- 4) D
- 5) A
- 6) A
- 7) A
- 8) B
- 9) C
- 10) B
- 11) A
- 12) C
- 13) C
- 14) B
- 15) C
- 16) D
- 17) C
- 18) B