

Identify the choice that best completes the statement or answers the question.

- Write the number 0.853 in scientific notation.
 - 0.853×10^0
 - 85.3×10^{-2}
 - 8.53×10^0
 - 8.53×10^{-1}
- Simplify $(4^8)^2$.
 - 4^{16}
 - 32^2
 - 4^6
 - 4^{10}
- Which list shows the numbers in order from **least** to **greatest**?
 - $2.7 \times 10^{-2}, 2.7 \times 10^{-3}, 7.2 \times 10^{-3}$
 - $2.7 \times 10^{-3}, 2.7 \times 10^{-2}, 7.2 \times 10^{-3}$
 - $2.7 \times 10^{-3}, 7.2 \times 10^{-3}, 2.7 \times 10^{-2}$
 - $7.2 \times 10^{-3}, 2.7 \times 10^{-3}, 2.7 \times 10^{-2}$
- Write the number 7.45×10^3 in standard notation.
 - 0.00745
 - 7,450
 - 745
 - 74,500
- Evaluate $(-3)^{-4}$.
 - 81
 - $\frac{1}{81}$
 - $-\frac{1}{81}$
 - 81
- Divide. Write the quotient as a power.
$$\frac{8^8}{8^3}$$
 - 40
 - 8^5
 - 8^{11}
 - Cannot combine
- Write $(y)(y)(y)(y)$ in exponential form.
 - 4^y
 - y^5
 - y^4
 - y^{-4}
- Simplify $\frac{9x^0y^{-6}}{z^{-7}}$.
 - $9xy^6z^7$
 - $\frac{9y^6}{z^7}$
 - $\frac{9z^7}{y^6}$
 - $\frac{9}{y^6z^7}$
- Divide. Write the quotient as a power.
$$\frac{16^{10}}{17^3}$$
 - 109
 - 16^{13}
 - Cannot combine
 - 16^7

10. Evaluate a^0b^{-2} for $a = -2$ and $b = -3$.

- a. $\frac{1}{9}$
- b. 0
- c. $-\frac{2}{9}$
- d. -9

11. Simplify $\frac{q^9y^{14}}{(qy)^7}$.

- a. q^2y^7
- b. q^9y^{14}
- c. q^9y^2
- d. Cannot simplify

12. Simplify $(2.2 \times 10^{11}) \div (1 \times 10^4)$ and write the answer in scientific notation.

- a. 2.2×10^4
- b. 22
- c. 2.2×10^{11}
- d. 2.2×10^7

13. Simplify $\left(\frac{4x^7}{x^2y^4}\right)^2$.

- a. $\frac{16}{x^7y^8}$
- b. $\frac{8x^{10}}{y^8}$
- c. $\frac{8x^9}{y^6}$
- d. $\frac{16x^{10}}{y^8}$

14. Simplify $\left(\frac{3}{4}\right)^{-2}$.

- a. $-\frac{2}{3}$
- b. $\frac{16}{9}$
- c. $\frac{9}{16}$
- d. -2

15. Multiply $(5.6 \times 10^{-7})(6.1 \times 10^4)$ and write the answer in scientific notation.

- a. 3.416×10^{-5}
- b. 2.87×10^{-3}
- c. 34.16×10^{-28}
- d. 34.16×10^{-3}

16. Simplify $m^3 \cdot y^6 \cdot m^2$.

- a. m^5y^6
- b. $(m \cdot y)^{11}$
- c. my^6
- d. m^6y^6

17. Simplify $\frac{-3v^0s^{-2}}{k^{-8}}$.

- a. $\frac{-3k^8}{s^2}$
- b. $\frac{-3}{s^2k^8}$
- c. $-3vs^2k^8$
- d. $\frac{-3s^2}{k^8}$

18. Simplify $\frac{a^3b^8}{(ab)^2}$.

- a. a^3b^4
- b. Cannot simplify
- c. ab^6
- d. a^3b^8

19. Simplify $\left(\frac{3x^8}{x^4y^4}\right)^2$.

a. $\frac{6x^{10}}{y^6}$

b. $\frac{9}{x^6y^8}$

c. $\frac{6x^8}{y^8}$

d. $\frac{9x^8}{y^8}$

20. Simplify $(7 \times 10^8) \div (1 \times 10^5)$ and write the answer in scientific notation.

a. 7×10^3

b. 7

c. 7×10^5

d. 7×10^8

Exponents and Scientific Notation

Answer Section

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