

1. Simplify $r^6 \cdot r^2$ using properties of exponents. Express in terms of positive exponents.

A) r^8 B) r^{12} C) $2r^{12}$ D) $2r^8$

Ans: A

2. Simplify $(8s^2)^4$ using properties of exponents. Express in terms of positive exponents.

A) $8s^8$ B) $8s^6$ C) $4096s^8$ D) $4096s^6$

Ans: C

3. Simplify $2z^{-2}z^5$.

A) z^3 B) $2z^{-3}$ C) $2z^{-10}$ D) $2z^3$

Ans: D

4. Simplify $(5e^{-3}f^7)^{-1}$ using properties of exponents. Express in terms of positive exponents.

A) $-5e^3f^7$ B) $5e^3f^7$ C) $\frac{e^3}{5f^7}$ D) $\frac{f^7}{5e^3}$

Ans: C

5. Simplify $\frac{(6hk)^2}{(-3hk)^3}$

A) $\frac{4hk}{3}$ B) $-\frac{4hk}{3}$ C) $-\frac{4}{3hk}$ D) $\frac{4}{3hk}$

Ans: C

6. Express 19,400,000 in scientific notation.

A) 194×10^5 B) 1.94×10^7 C) 194×10^{-5} D) 1.94×10^{-7}

Ans: B

7. Express 0.00028593

A) 2.8593×10^4 B) 28.593×10^{-5} C) 28.593×10^5 D) 2.8593×10^{-4}

Ans: D

8. Write 7.6×10^3 as a decimal.

A) 7,600 B) 760 C) 0.0076 D) 0.00076

Ans: A

9. Write 3.8×10^{-4} as a decimal.

A) 38,000 B) 0.00038 C) 0.0038 D) 3,800

Ans: B

10. Simplify $8q^{18}q^{-5}$ using properties of exponents. Express in terms of positive exponents.
Ans: $8q^{13}$

11. Simplify, writing the resulting expression with only positive exponents.

$$\left[\frac{3a(-x^6y^6)^2}{2x^3(-a^{-1}y^{-4})^2} \right]^3$$

- A) $\frac{27}{8a^9x^{27}y^{60}}$ B) $-\frac{27a^9x^{27}y^{60}}{8}$ C) $\frac{27a^9x^{27}y^{60}}{8}$ D) $\frac{8}{27a^9x^{27}y^{60}}$
Ans: C

12. Evaluate the expression.

$$2^3 \cdot 3^3 \cdot 5^2$$

Ans: 5,400

13. Evaluate the expression.

$$2^{-6} \cdot 3^{-2}$$

Ans: $\frac{1}{576}$

14. Evaluate the expression.

$$2^3 \cdot 3^{-3}$$

Ans: $\frac{8}{27}$

15. Write $3^3 \cdot 9 \cdot 27^3$ as a power of 3.
Ans: 3^{14}