

Product of powers

Write each product as a single power.

1. $3^5 \times 3^{-3} =$ _____

2. $4^3 \times 4^3 =$ _____

3. $7^{-4} \times 7^2 =$ _____

4. $5^7 \times 5^3 =$ _____

5. $4^7 \times 4^{-1} =$ _____

6. $6^{-4} \times 6^{-4} =$ _____

7. $2^6 \times 2^4 =$ _____

8. $2^2 \times 2^6 =$ _____

9. $3^2 \times 3^7 =$ _____

10. $2^4 \times 2^{-1} =$ _____

11. $10^3 \times 10^3 =$ _____

12. $6^{-1} \times 6^6 =$ _____

Quotient of powers

Write each quotient as a single power.

1. $3^9 \div 3^4 =$ _____

2. $4^{-3} \div 4^3 =$ _____

3. $10^5 \div 10^7 =$ _____

4. $2^{-1} \div 2^7 =$ _____

5. $7^8 \div 7^2 =$ _____

6. $7^8 \div 7^5 =$ _____

7. $5^5 \div 5^7 =$ _____

8. $3^6 \div 3^4 =$ _____

9. $10^5 \div 10^3 =$ _____

10. $6^{-3} \div 6^4 =$ _____

11. $3^8 \div 3^3 =$ _____

12. $5^7 \div 5^{-1} =$ _____

Power of a power

Write each expression as a single power.

1. $(4^5)^4 =$ _____

2. $(7^2)^2 =$ _____

3. $(6^{-2})^2 =$ _____

4. $(5^2)^3 =$ _____

5. $(5^{-3})^3 =$ _____

6. $(6^3)^{-4} =$ _____

7. $(6^5)^2 =$ _____

8. $(6^5)^3 =$ _____

9. $(10^2)^3 =$ _____

10. $(7^5)^4 =$ _____

11. $(2^3)^4 =$ _____

12. $(3^5)^{-4} =$ _____

Zero and negative exponents

Evaluate. Write fractions in simplest form.

1. $2^{-3} =$ _____

2. $4^{-1} =$ _____

3. $10^{-3} =$ _____

4. $5^{-2} =$ _____

5. $2^{-2} =$ _____

6. $5^0 =$ _____

7. $3^{-1} =$ _____

8. $10^{-4} =$ _____

9. $3^0 =$ _____

10. $10^{-2} =$ _____

11. $2^0 =$ _____

12. $4^0 =$ _____

Mixed practice

Simplify to a single power, then evaluate.

1. $3^{-4} \times 3^{-2} =$ _____

2. $(3^3)^3 \div 3^9 =$ _____

3. $(5^2)^3 \div 5^2 =$ _____

4. $3^5 \times 3^{-4} =$ _____

5. $(10^3)^2 \div 10^9 =$ _____

6. $(3^2)^3 \div 3^7 =$ _____

7. $10^5 \times 10^{-2} =$ _____

8. $3^{-1} \div 3^3 =$ _____

9. $5^{-6} \times 5^2 =$ _____

10. $(2^2)^3 \div 2^4 =$ _____

11. $2^{-3} \times 2^3 =$ _____

12. $(10^2)^3 \div 10^3 =$ _____