

Product of powers

Write each product as a single power.

1. $10^{-4} \times 10^{-3} =$ _____

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

3. $10^5 \times 10^{-1} =$ _____

4. $6^6 \times 6^{-2} =$ _____

5. $5^6 \times 5^2 =$ _____

6. $10^7 \times 10^4 =$ _____

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

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

9. $6^{-2} \times 6^4 =$ _____

10. $3^{-1} \times 3^{-1} =$ _____

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

12. $6^4 \times 6^6 =$ _____

Quotient of powers

Write each quotient as a single power.

1. $6^{-1} \div 6^4 =$ _____

2. $10^3 \div 10^8 =$ _____

3. $6^9 \div 6^2 =$ _____

4. $10^6 \div 10^2 =$ _____

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

6. $7^4 \div 7^7 =$ _____

7. $7^2 \div 7^6 =$ _____

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

9. $5^4 \div 5^7 =$ _____

10. $3^2 \div 3^8 =$ _____

11. $10^{-1} \div 10^6 =$ _____

12. $4^9 \div 4^4 =$ _____

Power of a power

Write each expression as a single power.

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

2. $(6^3)^3 =$ _____

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

4. $(6^{-2})^3 =$ _____

5. $(10^{-2})^{-4} =$ _____

6. $(7^{-3})^3 =$ _____

7. $(7^{-2})^{-4} =$ _____

8. $(4^{-3})^2 =$ _____

9. $(7^{-3})^2 =$ _____

10. $(3^{-3})^{-4} =$ _____

11. $(2^{-3})^2 =$ _____

12. $(2^2)^{-3} =$ _____

Zero and negative exponents

Evaluate. Write fractions in simplest form.

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

2. $10^0 =$ _____

3. $5^0 =$ _____

4. $2^0 =$ _____

5. $4^0 =$ _____

6. $4^{-2} =$ _____

7. $4^{-3} =$ _____

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

9. $2^{-2} =$ _____

10. $5^{-1} =$ _____

11. $5^{-3} =$ _____

12. $10^{-2} =$ _____

Mixed practice

Simplify to a single power, then evaluate.

1. $(3^3)^2 \div 3^4 =$ _____

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

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

4. $(3^3)^2 \div 3^6 =$ _____

5. $(2^2)^3 \div 2^6 =$ _____

6. $10^{-1} \div 10^{-2} =$ _____

7. $2^{-4} \times 2^6 =$ _____

8. $(3^3)^3 \div 3^6 =$ _____

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

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

11. $(2^3)^3 \div 2^2 =$ _____

12. $(2^3)^3 \div 2^7 =$ _____