



Power Uses

Directions: Read each real-world situation. Simplify the exponent expression that represents the situation. Do not evaluate large powers unless asked.

1) A computer stores one file using 2^8 bytes. Two identical files are stored together. Expression: $2^8 \cdot 2^8$

2) A square garden has side length x^3 feet. The area is side $\times$ side. Expression: $(x^3)^2$

3) A science experiment uses 10^7 cells. After one equal division, each container has: Expression: $\frac{10^7}{10^3}$

4) A cube-shaped gift box has edge length a^2 inches. Volume is length $\times$ width $\times$ height. Expression: $(a^2)^3$

5) A storage room has a floor area of $(4m)^2$ square meters. Expression: $(4m)^2$

6) A laboratory combines two samples labeled b^4 and b^5 . Expression: $b^4 \cdot b^5$

7) A telescope records two sets of measurements, each scaled by 10^5 . Expression: $10^5 \cdot 10^5$

8) A recipe doubles both the numerator and denominator of a fraction raised to the third power. Expression: $\left(\frac{x}{y}\right)^3$

9) A printer completes $(3p)^2$ tiny dots in one design. Expression: $(3p)^2$

10) A digital archive stores $(n^2)^4$ data units after several processing steps. Expression: $(n^2)^4$