

Name _____



Power in Action

Directions: Read each situation. Simplify the exponent expression using the correct law of exponents. Write your final answer in simplified exponent form.

1) Computer Storage: A computer combines two memory blocks with capacities of 2^8 bytes and 2^4 bytes. Expression: $2^8 \times 2^4$	
2) Bacteria Growth: A bacteria sample doubles for 3 time periods, then doubles for 5 more time periods. Expression: $2^3 \times 2^5$	
3) Science Lab: A microscope records a measurement of $(10^3)^2$ nanometers. Expression: $(10^3)^2$	
4) Solar Panels: The area of a square solar panel is represented by $(5m)^2$. Expression: $(5m)^2$	
5) Space Research: A distance is written as $(3 \times 10^4)^2$ meters. Expression: $(3 \times 10^4)^2$	
6) Water Pipeline: A pipe system is modeled by $(24 \div 6)^3$. Expression: $(24 \div 6)^3$	
7) Digital Files: A file size changes from 2^{12} bytes to 2^7 bytes after compression. Expression: $2^{12} \div 2^7$	
8) Cube Collection: A storage container has side length x^2 units. A larger model stacks the container three times in each dimension. Expression: $(x^2)^3$	