

(EXPONENT) RULES

<p>Multiplying Powers To multiply powers with the same base, keep the base the same and add the exponents.</p> $a^m \times a^n = a^{m+n}$ <p>1. Evaluate. a) $3^2 \times 3^3$ b) $2^{10} \times 2^4$ c) $2^3 \times 2^{11}$</p>	<p>Dividing Powers To divide powers with the same base, keep the base the same and subtract the exponents.</p> $a^m \div a^n = a^{m-n}$ <p>2. Evaluate. a) $4^3 \div 4^2$ b) $6^{10} \div 6^{-2}$ c) $3^4 \div 3^{15}$</p>
<p>Power of a Power To simplify a power of a power, keep the base the same and multiply the exponents.</p> $(a^m)^n = a^{m \times n}$ <p>3. Evaluate. a) $(3^2)^3$ b) $(2^3)^2$ c) $(2^4)^2$</p>	<p>Zero Exponents Any base raised to an exponent of zero equals 1.</p> $a^0 = 1$ <p>4. Evaluate. a) 4^0 b) $2^0 \times 2^{-3}$ c) $4^{-2} \times 4^{-4}$</p>
<p>Negative Exponents Any base raised to a negative exponent is equal to the reciprocal of the base raised to a positive exponent.</p> $a^{-m} = \frac{1}{a^m} \qquad \frac{1}{a^{-m}} = a^m$ <p>5. Evaluate. a) 4^{-2} b) $2^3 \times 2^2$ c) 3^{-4}</p>	<p>Simplifying Expressions Simplify.</p> <p>a) $4^3 \times 4^2 \times 4^2$ b) $(2^3 \times 2^2) \times 2^2$</p> <p>c) $(2^3)^2 \times 2^2$ d) $(2^3 \times 2^2)^2$</p> <p>e) $(2^3 \times 2^2) \times 2^2$ f) $(2^3)^2$</p>