**Laws of Exponents – Formula Sheet:**

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| **Zero Exponent Rule:** | $$a^{0}=1$$ |
| **Exponent of 1 Rule:** | $$a^{1}=a$$ |
| **Product Rule:** | $$a^{m}\*a^{n}=a^{m+n}$$ |
| **Quotient Rule:** | $$\frac{a^{m}}{a^{n}}= a^{m-n}$$ |
| **Power Rule:** | $$\left(a^{m}\right)^{n}=a^{mn}$$$$a^{m^{n}}=a^{\left(m^{n}\right)}$$ |
| **Negative Exponent Rule:** | $$a^{-m}=\frac{1}{a^{m}}$$$$\left(\frac{a}{b}\right)^{-m}=\left(\frac{b}{a}\right)^{m}$$$$\frac{a^{-n}}{b^{-m}}=\frac{b^{m}}{a^{n}}$$ |
| **Rational Exponent Rule:** | $$a^{m/n}=\sqrt[n]{a^{m}}$$$$a^{1/n}=\sqrt[n]{a}$$ |
| **Power of a Product Rule:** | $$(ab)^{m}=a^{m}b^{m}$$ |
| **Power of a Fraction Rule:** | $$\left(\frac{a}{b}\right)^{m}= \frac{a^{m}}{b^{m}}$$ |