Exponent Rules/Properties

$x^m \cdot x^n =$ __________

$\frac{x^m}{x^n} =$ __________

$(x^m)^n =$ __________

$x^0 =$ _____

$x^1 =$ __________

If $x^m = x^n$, then ______________

$x^r =$ ________

$(xy)^m =$ ___________

$\left(\frac{x}{y}\right)^m =$ __________

$x^{-m} =$ ____________

$\frac{1}{x^{-m}} =$ ____________

$\left(\sqrt[n]{x}\right)^m =$ ____________

$e =$ ____________ e is like π, it is a decimal that goes on forever, it is irrational

Scientific notation: ___________________, where $0 < a < 10$

If base is 10, then positive exponent moves decimal to the _____________.

If base is 10, then negative exponent moves decimal to the _____________.

$a^{\log_a m} =$ ________ since they are inverses of each other.

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Logarithm Rules/Properties

$\log_x(mn) =$ ______________________ $\log_x\left(\frac{m}{n}\right) =$ ______________________

$\log_x(m^n) =$ ____________________ $\log_x 1 =$ ______

$\log_x x =$ ________ If $\log_x m = \log_x n$, then _______________

$\log_x x^r =$ _________ $\log_a (xy)^m =$ _______________________

$\log_a \left(\frac{x}{y}\right)^m =$ ____________________ $\log_x -m =$ __________

Natural logarithms = _____________________ $\log_e x =$ _________

Common logarithms = ____________________ $\log_{10} x =$ _________

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Change of base: is used to ____.

$\log_a b =$ _________ or __________

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