

## Variable Exponents

Same Rules!  $a^x a^y = a^{x+y}$ ,  $\frac{a^x}{a^y} = a^{x-y}$ ,  $(ab)^x = a^x b^x$ ,  $\left(\frac{a}{b}\right)^x = \frac{a^x}{b^x}$

$$\text{And } (a^x)^y = a^{xy}$$

$$\text{eg } \frac{2^k + 2^k}{(4)^{5k}} = \frac{2 \cdot 2^k}{(2^2)^{5k}} = \frac{2^{k+1}}{2^{10k}} = 2^{(k+1)-(10k)} = 2^{-9k+1}$$