Factoring Basics

$$\frac{x^a}{x^b} = x^{a-b}$$

$$\frac{x+y}{z} = \frac{x}{z} + \frac{y}{z}$$

Example

$$\begin{aligned} \frac{x^3+x^4}{x} &= \frac{x^3}{x} + \frac{x^4}{x} \\ &= x^{3-1} + x^{4-1} \\ &= x^2 + x^3 \end{aligned}$$

Example

$$\begin{aligned} C &= 100 + 4Q^2 \\ AC &= \frac{C}{Q} \\ &= \frac{100+4Q^2}{Q} \\ &= \frac{100}{Q} + \frac{4Q^2}{Q} \\ AC &= \frac{100}{Q} + 4Q^{2-1} \\ AC &= \frac{100}{Q} + 4Q \end{aligned}$$