

Inverse functions (Logs + Exp)

Switch x and y and solve for y

$$f(x) = 3^x + 2 \quad \text{so} \quad x = 3^y + 2$$

change of Base

$$x - 2 = 3^y$$

$$\log_b a = \frac{\log a}{\log b}$$

$$\log_3(x-2) = y$$

Convert

Log \rightarrow Exponential

Exp \rightarrow Log

$$\log_b a = x \quad \longrightarrow \quad b^x = a$$

$$b^x = a$$

\longrightarrow Solve for x

by taking \log_b of both sides (inverse operation)

$$\text{so } \log_b b^x = \log_b a$$

$$\therefore x = \log_b a$$

For Solving Equations use the properties of logs and inverse operations