

KEY

Find the inverse function

1. $f(x) = 3^{x+2}$

$$x = 3^{y+2}$$

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

$$y^{-1} = \log_3(x) - 2$$

2. $f(x) = 6^{x-4}$

$$x = 6^{y-4}$$

$$\log_6(x) = y-4$$

$$y^{-1} = \log_6(x) + 4$$

3. $y = \log_6 x$

$$x = \log_6 y$$

$$6^x = y^{-1}$$

4. $y = \log_4 x - 5$

$$x = \log_4 y - 5$$

$$x+5 = \log_4 y$$

$$4^{x+5} = y^{-1}$$

5.

$$y = \frac{4^x + 9}{-2}$$

$$x = \frac{4^y + 9}{-2}$$

$$-2x = 4^y + 9$$

$$-2x - 9 = 4^y$$

$$\log_4(-2x-9) = y^{-1}$$

6.

$$y = \log_5(-3x-8) - 4$$

$$x = \log_5(-3y-8) - 4$$

$$x+4 = \log_5(-3y-8)$$

$$5^{x+4} = -3y-8$$

$$\frac{5^{x+4} - 8}{-3} = y^{-1}$$

7.

$$y = \frac{6^x + 2}{4}$$

$$x = \frac{6^y + 2}{4}$$

$$4x = 6^y + 2$$

$$4x - 2 = 6^y$$

$$y^{-1} = \log_6(4x-2)$$

8. $y = \log_7(x+3) - 2$

$$x = \log_7(y+3) - 2$$

$$x+2 = \log_7(y+3)$$

$$7^{x+2} = y+3$$

$$7^{x+2} - 3 = y^{-1}$$

$$y^{-1} = 7^{x+2} - 3$$