

Solve each equation for the given variable.

1. $2^{-b} = 2^{b+2}$

$b =$

2. $64^{2v-3} = \left(\frac{1}{8}\right)^{-2v}$

$v =$

3. $4^{3n} = \frac{1}{4}$

$n =$

4. $4^{1-n} * 4^{-3n-2} = 4^{2n}$

$n =$

Find the inverse of the function.

5. $f(x) = \log_2(x + 3)$

$f^{-1}(x) =$

6. $f(x) = \ln(4x)$

$f^{-1}(x) =$ $\frac{\text{}}{\text{}}$

$$7. f(x) = -\frac{3^x}{4}$$

$$f^{-1}(x) = \log_{\boxed{}} \boxed{}$$

$$8. f(x) = 2^x + 2$$

$$f^{-1}(x) = \log_{\boxed{}} \boxed{}$$

Solve each equation for the given variable.

$$9. \log_2(3x + 10) = \log_2(x + 8)$$

$$x = \boxed{}$$

$$10. \log_4(4r^2 + 3r) = \log_4(3r^2 + 10)$$

$$r = \boxed{} \quad \boxed{}$$

$$11. 4 - 6 \log_{11}(x + 4) = -2$$

$$x = \boxed{}$$

$$12. \log_9(x^2) - \log_9(4) = 1$$

$$x = \boxed{} \quad \boxed{}$$