

Math Sheet

Name _____ Score _____ / 14 Teacher _____ Date _____

Logarithmic Function Inverses

Find the inverse function. Use the printed domain to keep the inverse real and single-valued.

1. Find the inverse function.

$$f(x) = \log_8(7 \cdot x)$$

Given domain: $(0, \text{infinity})$

2. Find the inverse function.

$$f(x) = 7 \cdot \log_8(8 \cdot x)$$

Given domain: $(0, \text{infinity})$

3. Find the inverse function.

$$f(x) = \log_8(6 \cdot x^2)$$

Given domain: $(0, \text{infinity})$

4. Find the inverse function.

$$f(x) = \log_9(2 \cdot x + 5)$$

Given domain: $(\frac{-5}{2}, \text{infinity})$

5. Find the inverse function.

$$f(x) = \log_4(8 \cdot x^2 + 6)$$

Given domain: $[0, \text{infinity})$

6. Find the inverse function.

$$f(x) = \log_2(x^2)$$

Given domain: $(0, \text{infinity})$

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Find the inverse function. Use the printed domain to keep the inverse real and single-valued.

7. Find the inverse function.

$$f(x) = \log_6(-5 - x)$$

Given domain: $(-\infty, 0)$

8. Find the inverse function.

$$f(x) = 6 \cdot \log_8(-8 - x)$$

Given domain: $(-\infty, 0)$

9. Find the inverse function.

$$f(x) = \log_2(-6 - x^3)$$

Given domain: $(-\infty, \sqrt[3]{0})$

10. Find the inverse function.

$$f(x) = \log_2(-2 \cdot x + 3)$$

Given domain: $(-\infty, \frac{3}{2})$

11. Find the inverse function.

$$f(x) = \log_{10}(-8 \cdot x^3 + 9)$$

Given domain: $(-\infty, \sqrt[3]{\frac{9}{8}})$

12. Find the inverse function.

$$f(x) = \log_{10}(x^3)$$

Given domain: $(0, \infty)$

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Find the inverse function. Use the printed domain to keep the inverse real and single-valued.

13. Find the inverse function.

$$f(x) = \log_5(8 \cdot x)$$

Given domain: $(0, \infty)$

14. Find the inverse function.

$$f(x) = -8 \cdot \log_8(4 \cdot x)$$

Given domain: $(0, \infty)$
