

(NO CALCULATOR)

Determine the inverses of the following. Be sure to indicate domain restrictions if required.

1. $f(x) = \frac{4}{3}x - 12$

2. $f(x) = \sqrt{x+3} - 8$

3. $f(x) = \frac{x^3}{27} - 4$

4. $f(x) = x^2 - 6x + 5$

Solve the following:

6. $3^{x-2} = 81^{x+1}$

7. $(8)^x = \frac{1}{32}$

8. $\sqrt[5]{5} = 25^{4x}$

9. $4(8^{x-2}) = 32^{2x-1}$

10. $\log_5(x+6) = \log_5(3x-8)$

11. $3 \log_2(3x-9) = 9$

12. $\ln(x^2 - x) = \ln 2$

13. Rewrite as a logarithm: $3^x = w$ _____

14. Rewrite as exponential: $\ln x = 6$ _____

Evaluate:

15. $\log_{\left(\frac{1}{3}\right)} 1$ _____

16. $\ln(e^4)$ _____

17. $\log_4\left(\frac{1}{32}\right)$ _____