

You must provide complete answers to the following questions. Correct answers without supporting work will receive minimal credit.
Good luck.

Expand the expression.

$$1) \log_b \frac{m^3 p^7}{n^2 b^8}$$

1) _____

$$2) \ln \sqrt[3]{\frac{(x^2 + 1)^9}{2x + 5}}$$

2) _____

Write the expression as one logarithm.

3) $2 \log (x + 3) - 8 \log (x^2 + 4) + \frac{1}{4} \log y$

3) _____

Use the change of base formula to approximate the logarithm to four decimal places.

4) $\log_{6.3} 4.4$

4) _____

Solve the equation graphically. Round to the nearest thousandth.

5) $\log_2 (x^4 + 1) = 9$

5) _____