

Name:

Section 5.3 – Properties of Logarithms

1. Expand the following expression

$$\log \sqrt[3]{x^3(x+5)}$$

2. Condense into one logarithm

$$\log_3(2x-3) - \log_3(2x^2-x-3) + \log_3 3(x+1)$$

3. Determine an expression for $\log x$ if:

$$x = \frac{\sqrt[3]{a}}{bc^2}$$

4. Solve:

$$\log_3(x+5) - \log_3(x-3) = 2$$

5. Solve:

$$2^{(3 \log_8 5)} = x$$

6. Determine an equivalent expression for:

$$\log_3 \left(\frac{a}{9b^2} \right)$$

7. If $\log_2 5 = a$ and $\log_2 3 = b$, determine an expression in terms of a and b for:

$$\log_2 \left(\frac{25}{72} \right)$$