| Math 112 Written Homework: Properties of Logs | Student Name: | |
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| | Instructor: Laird | |

Math 112 Section: 062

<u>Directions</u>: Show all work, and answer each question that is asked. Explanations should be given in complete sentences. All graphs should be drawn accurately on this sheet, and be fully labeled.

1. Use properties of logarithms to completely expand the logarithmic expression. Wherever possible, evaluate logarithmic expressions.

 $\log(30x^{-1}y)$

| Math 112 | Written | Homework: | Properties | of Logs |
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Student Name:_____

Instructor: Laird Math 112 Section: 062

2. Use properties of logarithms to completely expand the logarithmic expression. Wherever possible, evaluate logarithmic expressions.

$$\log_2\left(\frac{8ab}{c^2\sqrt{d}}\right)$$

| Math | 112 | Written | Homework: | Properties | of Logs |
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Student Name:_____

Instructor: Laird

Math 112 Section: 062

3. Use properties of logarithms to rewrite as a single logarithm:

 $-2 \cdot \log(x) + 3 \cdot \log(y)$

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Student Name:

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Math 112 Section: 062

4. Use properties of logarithms to rewrite as a single logarithm:

$$13 \cdot \log_5(x) - 9 \cdot \log_5(y) - \frac{1}{7} \cdot \log_5(z) + 5 \cdot \log_5(w)$$