

Assignment : Properties of logarithm

Date _____

Expand each logarithm.

1) $\log \frac{x}{y}$

2) $\log \sqrt{x}$

3) $\log \left(\frac{u^2}{v} \right)^6$

4) $\log_4 \frac{x^5}{y^4}$

5) $\log_9 \left(\frac{x}{y^5} \right)^4$

6) $\log_9 (u^2 \cdot v)^6$

Condense each expression to a single logarithm.

7) $3 \log_3 5 + 6 \log_3 11 + \log_3 7$

8) $3 \log_5 3 + 3 \log_5 7 - 12 \log_5 10$

9) $\log_9 x + 3 \log_9 y + 4 \log_9 z$

10) $18 \log_3 u + 3 \log_3 v + 3 \log_3 w$

Answers to Assignment : Properties of logarithm

1) $\log x - \log y$

2) $\frac{\log x}{2}$

3) $12\log u - 6\log v$

4) $5\log_4 x - 4\log_4 y$

5) $4\log_9 x - 20\log_9 y$

6) $12\log_9 u + 6\log_9 v$

7) $\log_3 (7 \cdot 11^6 \cdot 5^3)$

8) $\log_5 \frac{7^3 \cdot 3^3}{10^{12}}$

9) $\log_9 (xz^4y^3)$

10) $\log_3 (w^3v^3u^{18})$

