



Math on the Fly!



NAME: _____ DATE: _____

Expanding and Condensing Logarithms

Expand each logarithmic expression below.

1. $\log(xy)$

2. $\log(4w^2)$

3. $\log(a^3b^4)$

4. $\log\left(\frac{m}{n}\right)$

5. $\log\left(\frac{c^5}{a^2}\right)$

6. $\log\left(\frac{x}{yz}\right)$

Condense and write each expression below as a single logarithm.

7. $\log(y) + \log(z)$

8. $\log_3(c) - \log_3(e)$

9. $2\log_4(t) + 7\log_4(v)$

10. $8\log(k) - 3\log(m)$

11. $\log(a) + \log(b) - \log(c)$

12. $2\log(u) - 9\log(v) - \log(w)$

SOLUTIONS

1. $\log(x) + \log(y)$

2. $\log(4) + 2\log(w)$

3. $3\log(a) + 4\log(b)$

4. $\log(m) - \log(n)$

5. $5\log(c) - 2\log(a)$

6. $\log(x) - \log(y) - \log(z)$

7. $\log(yz)$

8. $\log_3\left(\frac{c}{e}\right)$

9. $\log_4(t^2v^7)$

10. $\log\left(\frac{k^8}{m^3}\right)$

11. $\log\left(\frac{ab}{c}\right)$

12. $\log\left(\frac{u^2}{v^9w}\right)$