

**MAT Problems - Logarithms** (1 page; 19/9/17)

[Note: These are all included in the STEP Problems]

(1) Show that  $\log(4 - \sqrt{15}) = -\log(4 + \sqrt{15})$

(2) If  $k = \log_{24} 12$ , write the following in terms of  $k$ :

(a)  $\log_{24} 2$  (b)  $\log_{24} 6$

(3) Write  $\log_2 3$  in terms of logs to the base 10

(4) Is  $\log_2 3 > \frac{3}{2}$ ?

(5) Simplify  $\frac{\log_x b}{\log_x a}$