



13.  $\frac{1}{2}\log_3 x + 3\log_3(x-1)$

14.  $\log_8(x^2 - 1) - \log_8(x + 1)$

15.  $18\log\sqrt{x} + 9\log\sqrt[3]{x} - \log 10$

16. Show that  $\log_a(x + \sqrt{x^2 - 1}) + \log_a(x - \sqrt{x^2 - 1}) = 0$

Review

Determine how many terms in the series and then find the sum

1. 3, 6, 12, ..., 12288

2. 5, 15, 45, ..., 98415