

Quest 1: In each of the following, make  $x$  the subject & solve.

(i)  $\log_3 x = 2$

(ii)  $\log_2 (3x-4) = 3$

(iii)  $\log_{10} (x+1) = 2$

(iv)  $10^x = 30$

(v)  $10^{2x-5} = 123$

(vi)  $e^x = 17$

\* (vii)  $4e^{x-3} = 12$

(viii)  $\log_4 (x+1) = 2.6$

(ix)  $5^x = 18$

(x)  $3^{2x-1} = 75$

(xi)  $5 \log_{10} x = 14$

(xii)  $\log_e (5x+1) = 4.5$

Quest 2 Without the use of calculators! } Use the "LOG LAWS" to...  
} Simplify the following.

(a)  $\log 6 + \log 5 = \log ?$  (b)  $\log 20 - \log 5 = \log \dots ?$

(c)  $\log_{10} 2 + \log_{10} 50 =$   
=

(d)  $3 \log 5 + 4 \log 5 =$

(e)  $\log x^4 - \log x =$

(f)  $\log x^2 + \log x^3 =$

\* (g)  $3 \log m + \log m^2 =$

Qu 1 (1) 9 (2) 4 (3) 99 (4) 1.477 (5) 3.545 (6) 2.833 (7) 4.099 (8) 37.76 (9) 1.796

(10) 2.465 (11) 630.96 (12) 17.8 Qu 2 (a)  $\log 30$  (b)  $\log 4$  (c) 2 (d)  $7 \log 5$  (e)  $\log x^3$

(f)  $\log x^5$  or  $5 \log x$  (g)  $\log m^5$  or  $5 \log m$

ANSWERS