

NAME _____ INDEX NUMBER _____

SCHOOL _____ DATE _____

LOGARITHMIC NOTATIONS

<i>KCSE 1989 - 2012 Form 3 Mathematics</i>	Working Space
<p>1. 1992 Q10 P2 Without using logarithm tables , solve for x in the equation below:</p> $\log \frac{11}{2} \left(\frac{11}{1} \right) + 2 \log \left(\frac{4}{11} \right) - \log \left(\frac{5}{22} \right) = 2 \log 4 - \log x$ <p>(3marks)</p>	
<p>2. 1993 Q4 P2</p> <p>Solve for x in the equation</p> $2 \log_{10} x + \log_{10} 5 = 1 + 2 \log_{10} 4$ <p>(4 marks)</p>	

		Working Space
3.	<p>1994 Q14 P2</p> <p>Find the value of x that satisfies the equation $\text{Log } (2x-11) - \log 2 = \log 3 - \log x$ (4 marks)</p>	
4.	<p>1995 Q 13 P2</p> <p>Without using logarithm tables, find the value of x in the equation</p> $\text{Log } x^3 + \log 5x = 5 \log 2 - \log \frac{2}{5}$ <p style="text-align: right;">(3 marks)</p>	

		Working Space
5.	<p>1998 Q 12 P2</p> <p>Find x if $-3 \log 5 + \log x^2 = \log \frac{1}{125}$ —</p>	
6.	<p>1999 Q 6 P2</p> <p>Solve for x $(\log_3 x)^2 - \frac{1}{2} \log_3 x = \frac{3}{2}$</p>	

		Working Space
7.	2000 Q 5 P1 Find the value of x that satisfies the equation $\text{Log}(x + 5) = \log 4 - \log(x + 2)$	
8.	2001 Q 8 P2 Solve the equation $\log(x+24) - 2\log 3 = \log(9-2x)$	

		Working Space
9.	<p>2003 Q 5 P2</p> <p>Solve the equation $\log_{10}(6x - 2) - 1 = \log_{10}(x - 3)$ (3marks)</p>	
10	<p>2004 Q 5 P2</p> <p>Evaluate without using mathematical tables, the expression</p> $2\log_{10} 5 - \frac{1}{2} \log_{10} 16 + 2 \log_{10} 40$	

		Working Space
11	<p>2005 Q 7 P2 Find, without using Mathematical Tables the values of x which satisfy the equation</p> $\log_2(x^2 - 9) = 3\log_2 2 + 1 \quad (4 \text{ marks})$	
12	<p>2006 Q 10 P1 Without using mathematical tables or a calculator evaluate</p> $6 \log_2 \sqrt[3]{64} + 10 \log_3 \sqrt[5]{243} \quad (3 \text{ marks})$	

13	<p>2008 Q 14 P1 Given that $\log 4=0.6021$ and $\log 6=0.7782$, without using mathematical tables or a calculator, evaluate $\log 0.096$.</p> <p style="text-align: right;">(3marks)</p>	
14	<p>2008 Q 12 P2 Solve for y in the equation $\log_{10} (3y +2)-1=\log_{10} (y-4)$ (3marks)</p>	

		Working Space
15	<p>2010 Q 15 P2</p> <p>Find the value of x give that</p> $\text{Log } (15 - 5x) - 1 = \log (3x - 2) \quad (3 \text{ marks})$	

16 2012 Q 1 P2

Evaluate

$$\frac{\log 4^5 - \log 5^4}{\log 4^{\frac{1}{5}} + \log 5^{\frac{1}{4}}}$$

$$\frac{5 - \log 5^4}{\frac{1}{5} + \log 5^{\frac{1}{4}}}$$

giving the answer to 4 significant figures. (2 marks)