

NAME:

GRADE:

## LAWS OF LOGARITHMS WORKSHEET

LET'S MAKE MATHEMATICS LEARNING FUN!

1. Simplify the following:

a.  $\frac{2}{3} \log 3^{27^{\frac{1}{2}}}$                       b.  $\frac{\log 2^{8^{\frac{1}{3}}}}{\log 2^4}$                       c.  $\frac{1}{4} \log 2^{16} - 2 \log 2^{0.5}$

b. d.  $\frac{1}{2} \log 10^{100} + \frac{2}{3} \log 10^{1000}$

2. If  $\log 2 = 0.3010$ ,  $\log 3 = 0.4771$ ,  $\log 5 = 0.6990$ , evaluate

a.  $\log 6$                       b.  $3 \log 8$                       c.  $\log 30$

d.  $2 \log 5 + 5 \log 2$

3. Simplify without using table,  $\log 2 + \log 8 - \log 16^{\frac{1}{2}}$

4. Evaluate  $\log 8^{0.5^2} + \log 8^{3^2}$

5. Without using table, evaluate:

a.  $\frac{\log 81}{\log \frac{1}{3}}$

b.  $\frac{\log 8^{\frac{1}{2}}}{\log 4}$

c.  $\log 10^{2^5} + \log 10^{3^2} - \log 10^8$  (WAEC)

6. Solve the following logarithm equations:

a.  $2 \log x^{\left(\frac{27}{8}\right)} = 6$

b.  $\log x^{81} = 4$

c.  $x \log 4 = \log \sqrt{8}$