


SOALAN RAMALAN

MATEMATIK TAMBAHAN

KERTAS 1

LOGARITHM

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LOGARITHM
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Tanpa menggunakan kalkulator atau buku sifir empat angka, permudahkan $\frac{\log_{12} 49 \times \log_{64} 12}{\log_{16} 7}$.

Without using a calculator or four-figure tables, simplify $\frac{\log_{12} 49 \times \log_{64} 12}{\log_{16} 7}$.

(a) Selesaikan persamaan yang berikut. / *Solve the following equation.*

$$\sqrt{4p+1}-3=0$$

(b) Diberi $\log_5 50 - \log_5 (2k+4) + 4\log_{25} k = 2$, cari nilai k.
Given $\log_5 50 - \log_5 (2k+4) + 4\log_{25} k = 2$, find the value of k.

5 (a) Diberi $x = a^m$ dan $y = a^n$. Buktikan $\log_a xy = \log_a x + \log_a y$. [2 *markah*]

Given $x = a^m$ *and* $y = a^n$. *Prove that* $\log_a xy = \log_a x + \log_a y$. [2 *marks*]

(b) Diberi bahawa $\log_2 2 = m$, ungkapkan $\log_2 64\sqrt{x}$ dalam sebutan m. [3 *markah*]

Given that $\log_2 2 = m$, *express* $\log_2 64\sqrt{x}$ *in terms of* m. [3 *marks*]

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4 Selesaikan persamaan
Solve the equation

$$\log_3(2x+3) - 4\log_9 x^2 + 3\log_3 x = 2$$

[4 *markah*]
[4 *marks*]

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Find the value of x which satisfy the following equation :
Cari nilai x yang memuaskan persamaan berikut :

$$\frac{2}{\log_x xy}+\frac{2}{\log_y xy}+3=5x$$

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QUESTION 1

QUESTION 2

(a) $\sqrt{4p+1} = 3$

$4p + 1 = 9$

$4p = 8$

$p = 2$

(b) $\log_5\left[\frac{50}{2k+4}\right] + 4\left[\frac{\log_5 k}{\log_5 25}\right] = 2$

$\log_5\left[\frac{50}{2k+4}\right] + 4\left[\frac{\log_5 k}{2}\right] = 2$

$\log_5\left[\frac{50}{2k+4}\right] + \log_5 k^2 = 2$

$\log_5\left[\frac{50k^2}{2k+4}\right] = 2$

$\frac{50k^2}{2k+4} = 5^2$

$50k^2 = 50k + 100$

$k^2 - k - 2 = 0$

$(k-2)(k+1) = 0$

$k = 2$

QUESTION 3

QUESTION 4

$\log_3(2x+3) - 4\frac{\log_3 x^2}{\log_3 9} + 3\log_3 x = 2$

$\log_3(2x+3) - \log_3 x^4 + \log_3 x^3 = 2$

$\log_3 \frac{(2x+3).x^3}{x^4} = 2$

$\frac{(2x+3)}{x} = 3^2$

$x = \frac{3}{7}$