LATIHAN SOAL DAN PEMBAHASAN

MATEMATIKA SMA KELAS X

BAB LOGARITMA

1. Nilai dari ${}^{2}\log 4 + {}^{2}\log 12 - {}^{2}\log 6 = ...$
   A. 8
   B. 6
   C. 5
   D. 4
   E. 3

2. Nilai dari ${}^{2}\log 48 + {}^{5}\log 50 - {}^{2}\log 3 - {}^{5}\log 2 = ...$
   A. -2
   B. -6
   C. $\frac{16}{25}$
   D. 2
   E. 6

3. Jika log 3 = 0,4771 dan log 2 = 0,3010, maka nilai dari log 75 =...
   A. 0,7781
   B. 0,9209
   C. 1,0791
   D. 1,2552
   E. 1,8751

4. Diketahui ${}^{2}\log 3 = 1{,}6$ dan ${}^{2}\log 5 = 2{,}3$; nilai dari ${}^{2}\log \frac{125}{9}$ adalah...
   A. 10,1
   B. 6,9
   C. 5,4
   D. 3,2
   E. 3,7

5. Nilai dari ${}^{2}\log 8 - {}^{1/2}\log 0{,}25 + {}^{3}\log \frac{1}{27} + {}^{2}\log 1 = ...$
   A. -2
   B. -1
   C. 0
   D. 1
   E. 2

6. ${}^{a}\log \frac{1}{b} \cdot {}^{b}\log \frac{1}{c^2} \cdot {}^{c}\log \frac{1}{a^3} = ...$
   A. -6
   B. 6
   C. $\frac{b}{a^2c}$
   D. $\frac{a^2c}{b}$
   E. $-\frac{1}{6}$

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7. Jika ${}^{9}\log 8 = 3m$, nilai ${}^{4}\log 3 =$...

A. $\frac{1}{4m}$

B. $\frac{3}{4m}$

C. $\frac{3}{2m}$

D. $\frac{m}{4}$

E. $\frac{4m}{3}$

8. Jika ${}^{2}\log \frac{1}{a} = \frac{3}{2}$ dan ${}^{16}\log b = 5$, maka ${}^{a}\log \frac{1}{b^3} =$...

A. 40

B. -40

C. $\frac{40}{3}$

D. $-\frac{40}{3}$

E. 20

9. Diketahui ${}^{5}\log 3 = p$, maka ${}^{15}\log 81 =$...

A. $\frac{3}{34}p$

B. $\frac{4p}{p+1}$

C. $\frac{p+1}{4p}$

D. 1 + 4p

E. 4 (1 + p)

10. Jika ${}^{5}\log 3 = a$ dan ${}^{3}\log 4 = b$, maka ${}^{12}\log 75 =$...

A. $\frac{2+a}{a+b}$

B. $\frac{2+a}{a(1+b)}$

C. $\frac{2a}{a+b}$

D. $\frac{a+b}{a(1+b)}$

E. $\frac{a(1+b)}{a+b}$

11. ${}^{3}\log (3x+6) = {}^{3}\log 9$

12. ${}^{2}\log (x+9) = 5$

13. $\log (x^2 - 2x - 15) = \log (x + 3)$

14. ${}^{2}\log (5x-9) = {}^{5}\log (5x-9)$

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Rangkuman Sifat-Sifat Logaritma yang Ada Dalam Pembahasan ini

1. ${}^{a}\log b = c \quad \rightarrow \quad b = a^{c}$

2. ${}^{a}\log(b.c) = {}^{a}\log b + {}^{a}\log c$
3. ${}^{a}\log \frac{b}{c} = {}^{a}\log b - {}^{a}\log c$

4. ${}^{a}\log b^{n} = n \,.\, {}^{a}\log b$
5. ${}^{a}\log a = 1$

6. ${}^{a^{n}}\log b^{m} = {}^{a}\log b^{\frac{m}{n}}$
7. ${}^{a}\log b \,.\, {}^{b}\log c = {}^{a}\log c$

8. ${}^{a}\log b = \frac{1}{{}^{b}\log a}$
9. ${}^{a}\log b = \frac{{}^{c}\log b}{{}^{c}\log a}$

LIVEWORKSHEETS