



Assumption College Thonburi
Inventive English Program (IEP)
SELF-REVISION TEST FOR MATHEMATICS 5

IMPORTANT NOTE: Similar test questions and problems will come out in the final examination. Study each of the following questions/problems and take note of the mathematical concepts used in solving each of them. If you find this self-revision test easy and you understand each question/problem, then surely you will get a perfect score in the final examination. Good luck!

Answers are not included here so that you will answer/solve them by your own and to ensure that you do understand the concepts applied in each question/problem. If you want to compare your answers with my answers, send me a private message through www.teacherphil.wetpaint.com and I will send back to you the answers or you may see me during your free time. I am available to help you every day before 9:00 A.M., during lunch break (12:20-12:50) and after 3:30 P.M.

Part I. (10 marks) Select from the four choices the best answer

- What is the x-intercept of the graph of the function $f(x) = \log_3 x$?
a. 1 b. 2 c. 3 d. 4
- Which of the following equations is true?
a. $\log_2 10 + \log_2 100 = 110$ c. $\log_2 8 + \log_2 4 = 5$
b. $\log_2 10 + \log_2 100 = 10$ d. $\log x - \log y = \log(x - y)$
- Find the value of $\log_b \sqrt{y}$ if $\log_b y = 16$.
a. 8 b. 4 c. 3 d. 2
- Evaluate $\log_2(\log_2 16)$.
a. 2 b. 3 c. 4 d. 5
- Simplify $\log_c(3x) - \log_c(x)$.
a. $\log_c 3x^2$ b. $\log_c 3$ c. $\log_c x$ d. $\log x$
- Solve for x in $\log_3 8 + \log_3 x = \log_3 32$.
a. 4 b. 3 c. 2 d. 1
- If $f(x) = 5^x$, which of the following equations determine the inverse of the function?
a. $f(x) = \log_x 5$ c. $f(x) = \log x$
b. $f(x) = \log_5 x$ d. $f(x) = \log 5$
- Express $\log_4 x - \log_4 y$ as single logarithm.
a. $\log_4(x - y)$ b. $\log_4(xy)$ c. $\log_4(x + y)$ d. $\log_4\left(\frac{x}{y}\right)$

9. Determine the numerical value of $\log_3 81 - \log_3 3$.

- a. 4 b. 3 c. 1 d. 2

10. Simplify $e^{\ln x}$.

- a. e b. x c. e^x d. x^e

Part II. (5 marks) Fill in the blanks with the correct answer.

1. Change $4^2 = 16$ in logarithm form.

2. Simplify $\log(1000)$

3. Evaluate $\log 10^4$

4. Simplify $\log_{134} 134$

5. Evaluate $\log_2 \left(\frac{1}{2} \right)$

Part III. (5 marks) Solve the following problems. Show your Solution on the space provided.

1. Error Analysis (2 marks). Anant was asked to solve for x in $\log(x+1) + \log(x-1) = 1$. Look at his solution and explain why it is wrong and then write the correct solution.

$\log(x+1) + \log(x-1) = 1$
 $\log x + \log 1 + \log x - \log 1 = 1$
 $\log x + \log x + \log 1 - \log 1 = 1$
 $\log(x \cdot x) + \log \frac{1}{1} = 1$
 $\log x^2 + \log 1 = 1$
 $\log(x^2 \cdot 1) = 1$
 $\log_{10}(x^2 \cdot 1) = \log_{10} 10$
 $x^2 = 10$
 $x = \sqrt{10}$



Explanation:

Correct Solution:

2. Graph of Logarithmic Function (3 marks).

Graph the function $f(x) = \log_3 x$ and then describe its graph according to its basic properties such as domain, range, x-intercept, vertical asymptote, trend and the points where the graph passes through.