



Class: G12 – LS	Mathematics Quiz-2- (logarithm)	Duration: 45 min	
Name:		Total: / 10	Date: 16-12-2021

I-(4 points)

In the table below, only one of the proposed answers to each question, is correct.

Write down the number of each question and give, **with justification**, the answer corresponding to it.

N°	Questions	Answers		
		a	b	c
1	$\lim_{x \rightarrow e^{-1}} \frac{\ln x + 1}{ex - 1}$	1	e	e^{-1}
2	If $f(x) = x - x \ln x$ then $f'(x) =$	$1 - \ln x$	$-\ln x$	$1 - \frac{1}{x}$
3	The domain of definition of the function $f(x) = \ln(1 - \ln x)$ is	$] -\infty; e[$	$]0; e[$	$]0; +\infty[$
4	$\lim_{x \rightarrow +\infty} (2x + 3 - \ln^2 x)$	0	$+\infty$	$-\infty$

II-(3 points)

Solve in IR:

$$1) \ln(2 - x) + \ln(5 - x) = \ln 4 - \ln \frac{1}{7}$$

$$2) \ln(2x - 3) \geq 2\ln(6 - x) - \ln x$$

III-(3 points)

Calculate the following integrals:

$$1) \int_0^1 \frac{2dx}{4-3x}$$

$$2) \int_1^e \left(x - 2 + \frac{4 \ln x}{x} \right) dx$$

$$3) \int_{e^2}^{e^3} \frac{dx}{x(1 - \ln x)^2}$$

Good work