Graded quiz on Tangent Lines to Functions, Exponents and Logarithms

NÚMERO TOTAL DE PONTOS 13

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1. Convert $\frac{1}{49}$ to exponential form, using 7 as the factor.

   `1 ponto`

   - ⦿ 7^{-2}
   - ◯ (7^2)
   - ◯ 49^{-1}
   - ◯ $\large \frac{7}{7^3}$

2. A light-year (the distance light travels in a vacuum in one year) is $9,460$ trillion meters. Express in scientific notation.
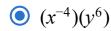
   `1 ponto`

   - ⦿ 9.46×10^{15} meters.
   - ◯ 0.946×10^{16}
   - ◯ 9460×10^{12} meters
   - ◯ 9.46×10^{15} kilometers

3. Simplify $(x^8)(y^3)(x^{-10})(y^{-2})$

   `1 ponto`

   - ⦿ $(x^{-2})(y)$
   - ◯ $(x^2)(y)$
   - ◯ $(x^{-80})(y^{-6})$
   - ◯ $(x)(y^{-2})$

4. Simplify $[(x^4)(y^{-6})]^{-1}$

   `1 ponto`

◉ $(x^{-4})(y^6)$

◯ $(x^3)(y^{-7})$

◯ {\large \begin {align} \frac{(x^-{4})}{(y^6)}\end {align}}

◯ {\large \begin {align}\frac{(x^4)}{(y^{-6})}\end {align}}

5. Solve for x:

$$\log_2 (39x) - \log_2 (x - 5) = 4$$

1 ponto

◉ \begin {align}\frac{-80}{23}\end {align}

◯ \begin {align}\frac{39}{23}\end {align}

◯ \begin {align}\frac{80}{38}\end {align}

◯ \begin {align}\frac{23}{80}\end {align}

6. Simplify this expression:

1 ponto

$$(x^{\frac{1}{2}})^{\frac{-3}{2}}$$

◯ x^{-1}

◯ $x^{\frac{1}{3}}$

◯ $x^{\frac{4}{3}}$

◉ $x^{\frac{-3}{4}}$

7. Simplify $\log_{10} 1000 + \log_{10} \frac{1}{10000}$

1 ponto

◯ 1

◉ -1

○ $\log_{10} -10$

○ $\frac{1}{10}$

8. If $\log_3 19 = 2.680$, what is $\log_9 19$?   (1 ponto)

○ 0.4347

◉ 1.304

○ 5.216

○ 0.8934

9. If $\log_{10} b = 1.8$ and $log_a b = 2.5752$, what is a?   (1 ponto)

◉ 5

○ 3

○ 6

○ 4

10. An investment of $1,600$ is worth $7,400$ after 8.5   (1 ponto)
years. What is the continuously compounded rate of
return of this investment?

○ 19.01%

○ 20.01

○ 17.01%

◉ 18.02%

11. A pearl grows in an oyster at a continuously compounded rate of .24 per year. If a 25-year old pearl weighs 1 gram, what did it weigh when it began to form?

1 ponto

○ 0.0002478

○ 0.2478

○ 0.02478

◉ 0.002478

12. $\log_2 z = 6.754$. What is $\log_{10}(z)$?

1 ponto

○ 0.49185

○ 0.82956

◉ 2.03316

○ 1.3508

13. Suppose that $g : \mathrm{R} \to \mathrm{R}$ is a function, and that $g(1) = 10$. Suppose that $g'(a)$ is negative for every single value of a. Which of the following could possibly be $g(1.5)$?

1 ponto

○ $g(1.5) = 11$

◉ $g(1.5) = 9.7$

○ $g(1.5) = 10.1$

○ $g(1.5) = 103.4$

☐   Eu compreendo que enviar um trabalho que não seja meu pode resultar em fracasso permanente deste curso ou desativação de minha conta do Coursera.

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