

**MATE 3012 - Parcial 1**

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Started: January 15, 2013 6:04 PM

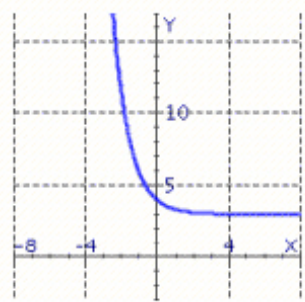
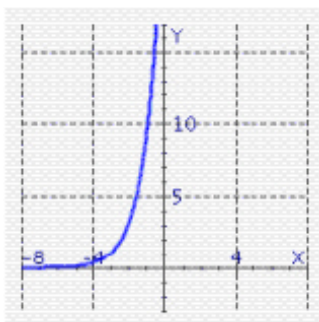
Questions: 20

**Finish****Save All****Help****1.** (Points: 2.5)Calcule  $23(2^{-3})$ 

Redondee su resultado a la centésima más cercana. No entre comas ni el signo de dólar.

**Answer**

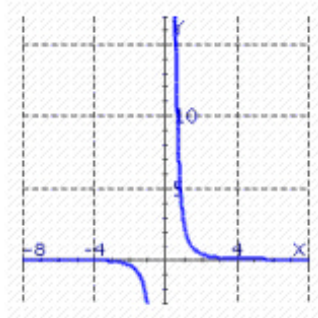
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**2.** (Points: 2.5)Determine the graph of the function  $y = 3^{x+3}$ . a. b.

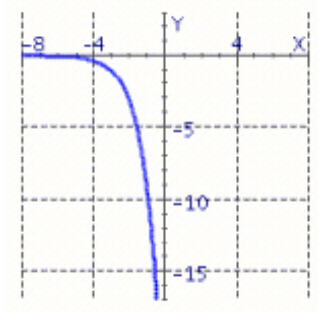
c.



d.



e.



Save Answer

3. (Points: 2.5)

State the range of the function  $y = 6 - e^x$ .

- a.  $(-\infty, 6)$
- b.  $(-\infty, \infty)$
- c.  $[6, \infty)$
- d.  $(-6, \infty)$
- e.  $(0, \infty)$

Save Answer

4. (Points: 2.5)

The population of a certain species of bird is limited by the type of habitat required for nesting. The population behaves according to the *logistic growth model*

$$n(t) = \frac{1,180}{0.2 + 22.7e^{-0.373t}}$$

where  $t$  is measured in years. What size does the population approach as time goes on?

- a. 1,180
- b. 11,800
- c. 17,700
- d. 5,900
- e. 236

Save Answer

5. (Points: 2.5)

Calcule el  $\ln(0.3)$ .

*Nota: Redondée su respuesta a la milésima más cercana (3 lugares a la derecha del punt decimal).*

Answer

Save Answer

6. (Points: 2.5)

Express the equation in logarithmic form.

$$e^{x+9} = 0.2$$

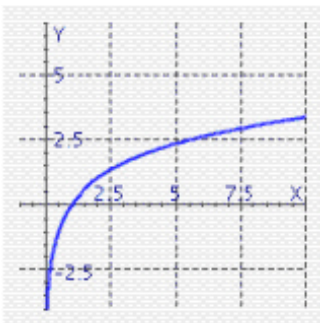
- a.  $x = 0.2 + \ln 9$

- b.  $x = 9 + \ln 0.2$
- c. none of these
- d.  $x = -9 + \ln 0.2$
- e.  $x = 0.2 - \ln 9$

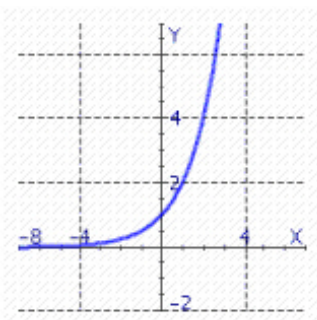
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7. (Points: 2.5)

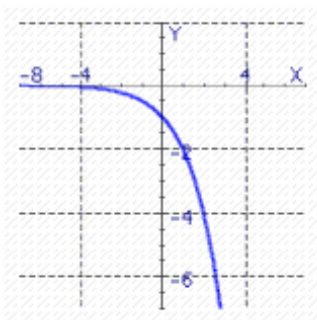
Use the graph of  $y = \log_3 x$  to help you identify the graph of  $y = 3^x$ .



a.

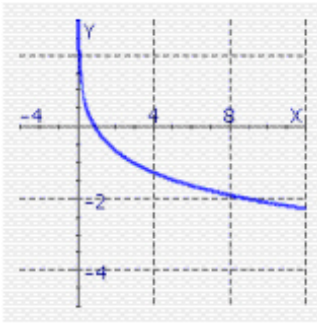


b.

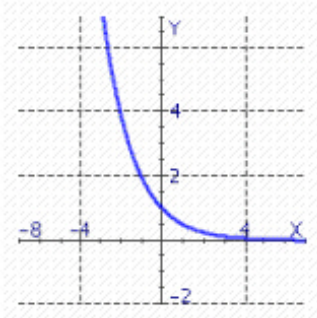


c. none of these

d.



e.



Save Answer

8. (Points: 2.5)

**Simplifique la expresión.**

$$\ln(e^9)$$

- a. 9
- b.  $9 \ln(e)$
- c.  $e^9$
- d. 1

Save Answer

9. (Points: 2.5)

**Simplifique la expresión.**

$$\log_a(a^{1923})$$

- a.  $1923 \log_a(a)$
- b.  $a^{1923}$

- c. 1923
- d. 1

Save Answer

10. (Points: 2.5)

**Combine la expresión a una con un solo logaritmo.**

$$\log_3(19) - \log_3(15)$$

- a.  $\log_3(4)$
- b.  $\log_6\left(\frac{19}{15}\right)$
- c.  $\log_3\left(\frac{15}{19}\right)$
- d.  $\log_3\left(\frac{19}{15}\right)$

Save Answer

11. (Points: 2.5)

**Combine la expresión a una con un solo logaritmo.**

$$\frac{1}{2} \ln 4 - \frac{1}{2} \ln 5$$

- a.  $\ln \sqrt[2]{\frac{4}{5}}$
- b.  $\ln\left(\frac{5}{4}\right)^2$
- c.  $\ln \sqrt[2]{\frac{5}{4}}$

- d.  $\ln\left(\frac{4}{5}\right)^{-2}$

Save Answer

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**12.** (Points: 2.5)

Use the Laws of Logarithms to rewrite the expression below in a form with no logarithm of a product, quotient, or power.

$$\log_8\left(\frac{x}{7}\right)$$

- a.  $(\log_8 x)(\log_8 7)$
- b.  $\log_8 x - \log_8 7$
- c.  $\log_8 x + \log_8 7$
- d.  $\frac{\log_8 x}{7}$
- e.  $\frac{\log_8 x}{\log_8 7}$

Save Answer

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**13.** (Points: 2.5)

Use the Laws of Logarithms to rewrite the expression below in a form with no logarithm of a product, quotient, or power.

$$\log_7(x(x-5))$$

- a.  $\log_7 x + \log_7 x - 5$
- b.  $2 \log_7 x - \log_7 5$

- c.  $\log_7 x - \log_7 (x - 5)$
- d.  $\log_7 x^2 - 5x$
- e.  $\log_7 x + \log_7 (x - 5)$

Save Answer

14. (Points: 2.5)

**Expanda la expresión a una con una suma o diferencia de logaritmos o múltiplos de logaritmos.**

$$\log_n \left( \frac{5\sqrt{2x^5}}{z^6} \right)$$

- a.  $\frac{1}{5} \log_n (2) + 1 \log_n (x) - \frac{6}{5} \log_n (z)$
- b.  $\frac{1}{5} \log_n (2) + 1 \log_n (x) + \frac{6}{5} \log_n (z)$
- c.  $\frac{1}{5} \log_n (2) - 1 \log_n (x) - \frac{6}{5} \log_n (z)$
- d.  $\log_n (2) + 5 \log_n (x) - 6 \log_n (z)$

Save Answer

15. (Points: 2.5)

**Expanda la expresión a una con una suma o diferencia de logaritmos o múltiplos de logaritmos.**

$$\log_4 (xy)$$

- a.  $\log_4 (x) + \log_4 (y)$
- b.  $\log_2 (x) - \log_2 (y)$
- c.  $\log_2 (x) + \log_2 (y)$



- d.  $\log_4(x) - \log_4(y)$

Save Answer

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**16.** (Points: 2.5)

Resuelva  $(1/2)^{4x+5} = (1/8)^{-3x+11}$

*Nota: Redondée su resultado a la centésima más cercana.*

**Answer**

Save Answer

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**17.** (Points: 2.5)

Resuelva  $4^{3x+3} = 16^{-3x-7}$

*Nota: Redondée su resultado a la centésima más cercana.*

**Answer**

Save Answer

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**18.** (Points: 2.5)

Resuelva por  $x$ , si  $\log(4x + 4) = \log(5x - 14)$

*Nota: Redondée tu resultado a la centésima más cercana.*

**Answer**

Save Answer

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**19.** (Points: 2.5)

Solve the logarithmic equation for  $x$ .

$\log x = 5$

- a.  $x = 10,000$
- b.  $x = 50,000$
- c.  $x = 100,000$

- d.  $x = 0.699$
- e.  $x = 0.00001$

Save Answer

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**20.** (Points: 2.5)

Find the solution of the exponential equation, correct to four decimal places.

$$e^{2-3x} = 15$$

- a.  $x = 5.5190$
- b.  $x = -2.7440$
- c.  $x = 0.5436$
- d.  $x = 2.7183$
- e.  $x = -0.2360$

Save Answer

**Finish**

**Save All**

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