

Online Homework System

Assignment Worksheet  
12/6/05 - 8:28 AM**Name:** \_\_\_\_\_**Class:** Kates.Test.MapleT.A.**Class #:** \_\_\_\_\_**Section #:** \_\_\_\_\_**Instructor:** Paul Kates**Assignment:** latex-test2-assignment-Dec-5-05

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**Question 1: (1 point)**

What is the capital of California?

- (a) Sacramento
- (b) Los Angeles
- (c) San Francisco

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**Question 2: (1 point)** $3 \log x - 2 \log y =$ 

- (a)  $\log(3x - 2y)$
  - (b)  $\log(x^3 - y^2)$
  - (c)  $\log(x^3 y^2)$
  - (d)  $\log\left(\frac{x^3}{y^2}\right)$
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**Question 3: (1 point)**

Consider the function  $f(x) = -5x^9$ . What happens to  $f(x)$  as  $x \rightarrow -\infty$ ?

- (a)  $f(x) \rightarrow \infty$
- (b)  $f(x) \rightarrow -\infty$
- (c)  $f(x) \rightarrow 0$

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**Question 4: (1 point)**

The equation  $2x - 3y^2 = 4$  defines a function with an independent variable  $x$ .

- (a) True
- (b) False

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**Question 5: (1 point)**

The equation  $9x - 3y^2 = 3$  defines a function with an independent variable  $x$ .

- (a) True
- (b) False

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**Question 6: (1 point)**

Match the following polynomials with their factorizations:

$$\text{--- } x^2 - 2x + 1 \quad \text{--- } x^2 + 2x + 1 \quad \text{--- } x^2 - 1$$

1.  $(x + 1)^2$
2.  $(x - 1)^2$
3.  $(x - 1)(x + 1)$

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**Question 7: (1 point)**

Which two scientists independently discovered inductance?

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**Question 8: (1 point)**

Answer the following questions:

(a) Compute the exact value of  $f'(2)$  if  $f(x) = x^3 + 3 \cos(x) - 1$ .

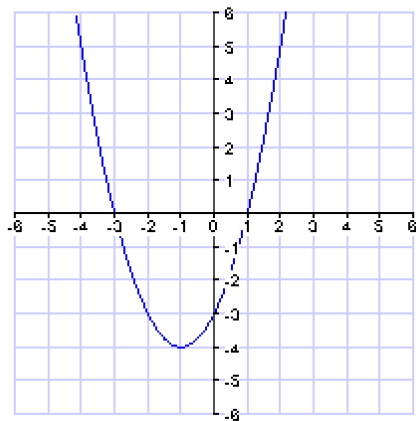
(b) (i) Find the absolute minimum point on the graph of the function  $f(x) = \frac{x}{1+x^2}$ .

(ii) Find the absolute maximum point on the graph of the function  $f(x) = \frac{x}{1+x^2}$ .

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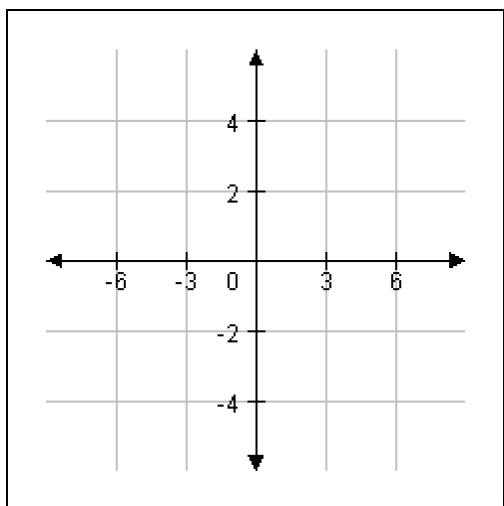
**Question 9: (1 point)**

What are the  $x$ -intercepts of the graph shown?



**Question 10: (1 point)**

Sketch the graph of the function  $y = x^2/9$ .

**Question 11: (1 point)**

Find the transpose of the matrix

$$A = \begin{bmatrix} 6 & 2 & 2 \\ -8 & 3 & 6 \end{bmatrix}$$