Mathematics 122

Quiz 10 Name: Key

You must show your work to get full credit.

Compute the following derivatives:

1. $y = 2x + 5$. $y' =$ 2

2. $R = 3q^2 + 5q - 9$. $\frac{dR}{dq} =$ $6q + 5$

3. $A = \pi r^2$. $\frac{dA}{dr} =$ $2\pi r$

4. $f(x) = 4x^5 + 6x^{-2}$. $f'(x) =$ $20x^4 - 12x^{-3}$

$f' = 20x^4 - 12x^{-3}$

$= 20x^4 - \frac{12}{x^3}$

$= 20x^4 - \frac{12}{x^3}$

either is ok.

5. $y = ax^2 + bx + c$ where a, b, and c are constants. $y' =$ $2ax + b$