Mathematics 122

Quiz # 11 Name: Key

You must show your work to get full credit.

Find following derivatives. Here a and b are constants.

1. $y = 3x^2 - 4x + 7$ $\quad y' =$ $6x-4$

2. $C(q) = 8q^3 + 19$ $\quad \frac{dC}{dq} =$ $24q^2$

3. $f(t) = 2\sqrt{t} = 2t^{\frac{1}{2}}$ $\quad f'(t) =$ $t^{-\frac{1}{2}} = \frac{1}{\sqrt{t}}$

$f' = \frac{1}{2} 2t^{\frac{1}{2}-1} = t^{-\frac{1}{2}}$

4. $h(u) = \frac{3}{u^2} = 3u^{-2}$ $\quad h'(u) =$ $-6u^{-3} = \frac{-6}{u^3}$

$h'(u) = -6u^{-3}$

5. $y = 3ax^2 + ax + 4b^5$ $\quad y' =$ $6ax+a$

constant so $(4b^5)' = 0$

$y' = 6ax + a$