Mathematics 122

Quiz #16

Name: KEY

You must show your work to get full credit.

Compute the following derivatives.

1. $y = 5e^x + 3\sqrt{x} - \dfrac{4}{x^5}$

$= 5e^x + 3x^{\frac{1}{2}} - 4x^{-5}$

$y' = 5e^x + \frac{3}{2}x^{-\frac{1}{2}} - (-5)4x^{-6}$

$y' =$ $5e^x + \frac{3}{2}x^{-\frac{1}{2}} + 20x^{-6}$

or

$y = 5e^x + \frac{3}{2\sqrt{x}} + \frac{20}{x^6}$

2. $P(t) = 1{,}000(1.08)^t$

$P'(t) =$ $1{,}000(1.08)^t \ln(1.08)$