MATH 10250 Quiz 5 **NAME:**

July 19, 2018

You have **10 minutes** for the quiz. Please show your work and write neatly.
NO CALCULATOR please!

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1. Compute the derivative of $f(x) = e^{-2x}\ln(x)$.

$f'(x) = -2e^{-2x}\ln(x) + \frac{e^{-2x}}{x}$

2. An amount of \$50,000 is deposited in a bank that pays interest at the rate of 10% per year, compounded **semiannually**. What is the total accumulated amount on the deposit at the end of 4 years, assuming that there are no withdrawals during those 4 years? *(circle the correct answer below)*

(a) $50,000 = P\left(1+\frac{0.1}{2}\right)^8$

(b) $A = 50,000\left(1+\frac{0.1}{2}\right)^4$

(c) $A = 50,000\left(1+\frac{0.1}{1}\right)^4$

(d) $A = 50,000\left(1+\frac{0.1}{2}\right)^8$

(e) $A = 50,000\left(1+\frac{10}{2}\right)^8$

$A = P\left(1+\frac{r}{m}\right)^{mt}$

$P = 50,000$

$r = 0.1$

$m = 2$

$t = 4$

$\Rightarrow A = 50000\left(1+\frac{0.1}{2}\right)^8$