Average Bank Balance

An amount of money $A_0$ compounded continuously at interest rate $r$ increases according to the law:

$$A(t) = A_0 e^{rt} \quad (t=\text{time in years.})$$

a) What is the average amount of money in the bank over the course of $T$ years?

b) Check your work by plugging in $A_0 = 100$, $r = .05$ and $T = 1$; does the result seem plausible?