1. (4 points) This morning, Mary has invested $800 in a bank account which earns 6.5% interest compounded continuously.

   (a) How much money (to the nearest penny) will she have in her account one year from today?

   (b) How long will it take for the balance in her account to reach $1500?
2. (3 points) Given that \(100e^{0.2t} = 300\), find the exact value of \(t\) without using a calculator.

3. (3 points) If a substance has a half-life of 20 days, then how long does it take until only 7% of that substance remains? For full credit, be sure that your answer is accurate to at least one place after the decimal point.