

Name \_\_\_\_\_

1. (6 points) When Mary was born, her parents deposited \$5000 in an account which earns 6.5% interest compounded continuously.

(a) Write a formula for the number of dollars,  $A$ , in Mary's account  $t$  years after her birth.

(b) How much money (to the nearest penny) will she have in her account on her 5th birthday?

(c) How old will Mary be when the balance in this account reaches \$20,000 ?

2. (4 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.