A2: Word Problems WKST

1. Jackie makes an $800 deposit into a bank account earning 4.5% interest.
    a. If the interest is compounded quarterly how much money will Jackie have in 10 years?
    b. If the interest is compounded continuously how much money will Jackie have in 10 years?
    c. If Jackie's money is compounded continuously, how long will it take her money to double?
    d. If Jackie's money is compounded monthly, how long will it take her money to triple?

2. Joe deposits $3500 into a bank account that earns interest compounded continuously. If Joe's money doubles in 9 years, what interest rate was used?

3. Your generous family gives you a total of $3500 as gifts when you graduate from high school. You decide to invest this money in a savings account that earns interest at a rate of 3.7% per year. How much will you have in 4 years if your interest is compounded…
    a. Annually?
    b. Quarterly?
    c. Weekly?
    d. Continuously?

4. If you invest $10,000 at a 2.6% interest rate compounded continuously how long will it take for your investment to grow to $15,000? Round to 3 decimal places.

5. If your initial investment triples in 20 years what interest rate was used if your interest is compounded…
    a. Continuously?
    b. Monthly?

6. Joe decides to invest $8000 for 25 years. Bank A compounds interest continuously at an annual rate of 3%. Bank B compounds interest quarterly at an annual interest rate of 4.5%. What bank should Joe pick?

7. If a savings account earns 4% interest compounded semiannually, how much money should be invested so that you have $25,000 at the end of 15 years?

8. Fill in the table for a savings account in which the interest is compounded continuously.

Initial Investment	Annual % Rate	Time to Double	Amount After 10 Years
$10,000	3.50%		

ANSWERS

I.

1.
   a. $1251.50
   b. $1254.65
   c. 15.403 years
   d. 24.459 years

2. 7.702%

3.
   a. $4047.46
   b. $4055.54
   c. $4058.08
   d. $4058.30

4. 15.595 years

5.
   a. 5.493%
   b. 5.506%

6. Bank B

7. $13,801.77

8.

Initial Investment	Annual % Rate	Time to Double	Amount After 10 Years
$10,000	3.50%	19.804 years	$14,190.68