Name _____

6-2 Additional Practice- Exponential Models

1. Darren invests $4,500 into an account that earns 5% annual interest. How much will be in the account after 10 years if the interest rate is compounded annually, quarterly, monthly, or continously?

	Use the Compound Interest Formula	Amount after 10 years
Annually		
Quarterly		
Monthly		
Continously		

a) Which compound interest should Darren choose?

HABITS OF MIND Generalize which yields the greatest return on investment: Compounding Annually, Quarterly, Monthly, or Continously?

2.

Time (yr)	Amount ($)
1	3,225
2	3,500
3	3,754
4	4,042
5	4,368
6	4,702
7	5,063
8	5,456

Model with Mathematics Use the points listed in the table for years 7 and 8 to find an exponential model. Then use a calculator to find an exponenttial model for the data. ~~Explain how to find each model.~~ Predict the amount in the account after 15 years. MP.4

Name _____

6-2 Lesson Quiz Exponential Models

1. Steve invests $1,800 in an account that earns 3.7% annual interest, compounded continuously. What is the value of the account after 10 years? Round your answer to the nearest dollar.

   A about $2,466
   B about $2,589
   C about $2,601
   D about $2,606

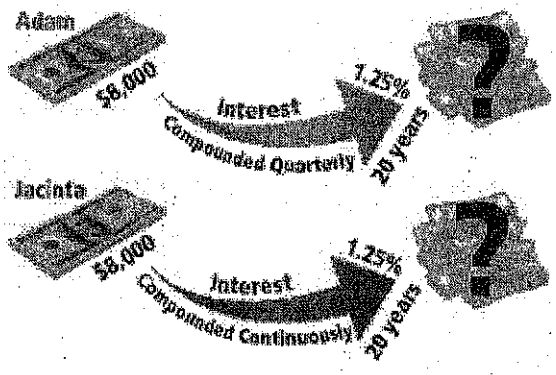
2. The graph of an exponential model in the form $y = a \cdot b^x$ passes through the points (3, 5) and (4, 10). Which point is also on the graph?

   A (2, 0)
   B (2, 1)
   C (5, 15)
   D (5, 20)

3. Micah invests $5,280 in an account that earns 4.2% interest, compounded monthly. Write a function for the amount that will be in the account after t years. What is the value of the account after 8 years?

   $A(t)$ = _____; After 8 years, the value in the account is _____.

4. **Reason** Adam invests $8,000 in an account that earns 1.25% interest, compounded quarterly for 20 years. On the same date, Jacinta invests $8,000 in an account that earns continuous compounded interest at a rate of 1.25% for 20 years. Who do you predict will have more money in their account after 20 years? Explain your reasoning. MP.2



5. A wildlife biologist determines that there are approximately 200 deer in a region of a national park. The population grows at a rate of 7% per year. What is an exponential function that models the expected population?

   A $f(x) = 200(0.07)^x$
   B $f(x) = 200(1.07)^x$
   C $f(x) = 1.07(200)^x$
   D $f(x) = 7(200)^x$