Algebra 2A $\overline{25}$ Name:_____

Exponential Functions Quiz

Multiple Choice – Circle the best possible answer (1 pt each)

1. Which statement below is true about this function: $y = 0.8\left(\frac{7}{3}\right)^x$

A. This function is decreasing with a y-intercept of $\frac{7}{3}$

B. This function is increasing with a y-intercept of $\frac{7}{3}$

C. This function is decreasing with a y-intercept of 0.8

D. This function is increasing with a y-intercept of 0.8

2. Which expression shows the value of a $2500 investment after it has grown by 4.5% per year for 12 years?

A. $2500(1.045)^{12}$ B. $2500(1.045)^{144}$

C. $2500(1.45)^{12}$ D. $2500(0.045)^{12}$

3. A balloon with a small leak loses 0.5% of its volume every day. If it originally contained 40 liters of gas, what is the volume of the gas after one week?

A. $40(0.05)^7$ B. $40(0.95)^7$

C. $40(0.005)^7$ D. $40(0.995)^7$

4. Suzie invested $4,250 in an account that gives an interest rate of 5.5% compounded monthly. How much money will she have after 15 years?

A. $13,540,518.30 B. $9488.03

C. $9679.73 D. $8,323.89

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Short Answer – Show ALL work for full credit

5. Write an equation that models the data. Check with your calculator. (2 pts each)

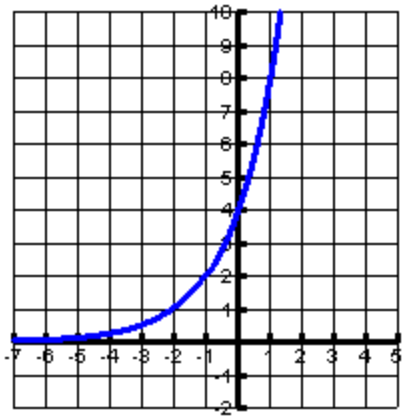
A.

X	Y
1	600
2	240
3	96
4	38.4

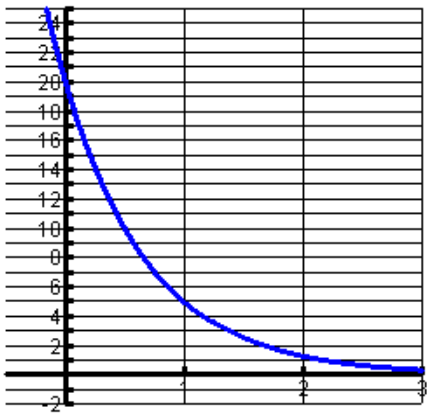
B.

X	Y
0	22
1	66
2	198
3	594

C.



D.



6. Truck dealers use a "rule of thumb" that a truck loses about 28% of its value each year. Suppose that you bought a used truck on January 1, 2005 for $29,400. 3 points

a. Write an equation that models the value of your truck after x years.

b. According to this "rule of thumb", what would the truck be worth on January 1, 2009? Show all work!

c. According to this "rule of thumb", what would the truck have been worth on January 1, 2003? Show all work!

7. Mrs. Surato invested $1,000 into a college fund for her son that gives 6% interest compounded continuously. (4 pts)

a. Write an equation that models how much money is in the account after t years.

b. How much money will be in the account in 18 years when Matthew graduates from high school?

c. How much money would be in the account if Mrs. Surato had invested $2,000?

d. Matthew is a super genius and he graduates from high school when he is 15. How much money is in his college fund?

Solve for the variable: (2 pts each)

8. $1000 = 850\left(1+\frac{r}{12}\right)^{24}$

9. $19,393 = Pe^{(0.12\bullet 4)}$

10. $3,715.87 = P\left(1+\frac{0.02}{4}\right)^{4*3}$