

name: _____

MCF3M - Quiz #2: Exponents and Exponential Functions /31

1. Identify the following as linear, quadratic, exponential . [3]
(Hint: use first and second differences and ratio of first difference)

x	y
-2	8
-1	2
0	0
1	2
2	8

x	y
-2	25
-1	20
0	15
1	10
2	5

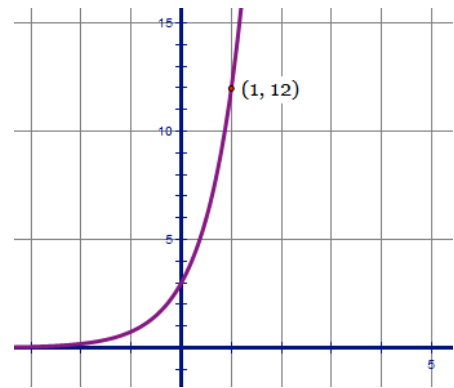
x	y
-2	0.04
-1	0.2
0	1
1	5
2	25

2. Determine an equation for each exponential function described below. [4]

a)

x	y
0	500.0
1	600.0
2	720.0
3	864.0
4	1036.8

b)



3. a) Give an example of an exponential function representing growth using an equation. [1]

b) Give an example of an exponential function representing decay using an equation. [1]

4. Evaluate. (leave answers in fractional form) [4]

a) -2^6

b) $(-3)^0$

c) $\left(\frac{2}{3}\right)^4$

d) $78125^{\frac{2}{7}}$

5. Simplify (express answers as fractions with pos exponents only) [8]

a) $(7^3)^{-5}$ b) $\frac{5(5^{-4})}{5^7}$ c) $\left(\frac{2x}{3}\right)^{-2}$ d) $\left(\frac{4a^{-3}}{(a^3)^2}\right)^2$

6. Evaluate without a calculator (show all steps for full marks) [3]

$$\sqrt[7]{(64^{\frac{1}{2}})(64^{\frac{2}{3}})}$$

7. The value of my new Volkswagon, V, was \$30 000 but it has depreciated in value by 15% at the end of each year since it was purchased.

a) Write a function that models the situation [1]

b) What is the car's value at the end of 4 years? What is the car's value at the end of 5 years? [2]

c) What value did the car lose during the 5th year? [1]

d) When will the car be worth \$6948.50? [3]