**Name:**

1) Solve algebraically. Trial and error is not an appropriate method of solution. You must show all your work.

Learn how to type math roots and fractions by clicking on the link in the assignment list. Alternately, you may type  as cuberoot(*x*) and show raising to the *n*th power as ^*n*, like *x* 3 is typed *x*^3.

 a) 

Answer:

Show your work here:

b) 

Answer:

Show your work here:

c) 

 Answer:

Show your work here:

2) Solve algebraically and check your potential solutions: 

 Answer:

Show your work here:

3) The volume of a cube is given by *V* = *s*3, where *s* is the length of a side. Find the length of a side of a cube if the volume is 800 cm3. Round the answer to three decimal places.

 Answer:

Show your work here:

4) a) Show the steps that you would take to solve the following algebraically: 

Show your work here:

 b) What potential solution did you obtain? Explain why this is not a solution.

Answer:

5) For the following function, C computes a value, where if you add millions of dollars to the value, the result is the cost of implementing a city recycling project when *x* , as a percent (not its decimal equivalent), citizens participate.



a) Using this model, determine the cost if 60% of the citizens participate?

 Answer:

Show your work here:

b) Using this model, find the percentage of participation that can be expected if $5 million is spent on this recycling project? Set up an equation and solve algebraically. Round to the nearest whole percent.

 Answer:

Show your work here:

6) a) If , fill in the following table for *x* = 0, 1, 2, 3, 4. Round to three decimal places where necessary.

|  |  |
| --- | --- |
| ***X*** | ***y*** |
| 0 |  |
| 1 |  |
| 2 |  |
| 3 |  |
| 4 |  |

Show your work here:

 b) Explain why no negative values are chosen as values to substitute in for *x*.

 Answer:

1. Graph in MS Excel and paste your graph here.

Answer:

7) Suppose that *N*=models the number of cases of an infection, in millions, of a disease *x* years from now.

 a) How many cases of the infection will there be 16 years from now?

 Answer:

Show your work here:

 b) In how many years will there be 7 million cases?

Answer:

Show your work here:

**Part 1:**

Using the Library, web resources, and/or other materials, find the average weight in pounds of a type of bird of your choice. Use the rational exponent equation L = 2.43 \* W^0.3326 to estimate the wingspan L in feet of the bird that weighs W pounds (Rockswold, 2006). Include in your post the type of bird and the average weight and show the calculations necessary to find the approximate wingspan.

In case conversions are necessary, 16 oz is 1 pound; 1 kg = 2.2 pounds.

Be sure to reference all sources using APA style.

**Part 2**:

An application of a rational function is T = (AB)/(A+B), which gives the time, T, it takes for two workers to complete a particular task where A & B represent the time it would take for each individual worker to complete the identical task.

Estimate how long it takes you to complete a task of your choice (house cleaning, mowing, etc.) in a given week. Suppose that Joe is slower than you at the given task and takes twice as long as you do. If you work together, how long would it take you to complete the task?

Include the type of job, the time it takes you and Joe individually to complete the job, and the calculations needed to show how long it would take to complete the job if you worked together. Include units with your answer.

**In your own words, please post a response to the Discussion Board and comment on other posting.**