Name:

MTH133

Unit 4 – Individual Project

**Name:**

1) State the domain of the following:

a) 

Answer:

b) 

Answer:

c) 

Answer:

d) 

Answer:

e) 

Answer:

2) Suppose the graph of is shifted to obtain each the following graphs. What is the equation of the function, *g*(*x*), for each graph?

a)



Answer:

b)



Answer:

3) Consider the following graph of *y* = *f*(*x*).



P: (2,4)

a) If *h*(*x*) *= f*(*x*) *+ 3*, what would the new coordinates of *P* be after the shift? Give answer in (*x*, *y*) form.

 Answer:

b) If , what would the new coordinates of *P* be after the reflection? Give answer in (*x*, *y*) form.

 Answer:

4) Consider the function .

a) Find *h*, the *x*-coordinate of the vertex of this parabola.

 Answer:

 Show your work here:

b) Substitute the two integers immediately to the left of *h* and the two integers immediately to the right of *h* into the function to find the corresponding *y*. Fill in the following table. Make sure your *x*-values are in increasing order in your table.

Answer:

|  |  |
| --- | --- |
| ***x*** | ***y*** |
|  |  |
|  |  |
| ***h* =\_\_** |  |
|  |  |
|  |  |

c) Use MS Excel or another web-based graphing utility to graph the function by plotting the points found in the table in part b. Paste your graph here.

Answer:

5) Find the equations for the horizontal and vertical asymptotes of the following. Type *none* if the function does not have an asymptote.

a) 

Answer:

Horizontal:

Vertical:

b) 

Answer:

Horizontal:

Vertical:

c)



Answer:

Horizontal:

Vertical:

d)



Answer:

Horizontal:

Vertical:

Using the Library, web resources, and/or other materials, find the most recent report of the annual inflation rate of a country of your choice as well as the type of currency used in that country. The equation



also typed as S=C(1+r/100)^5 to find the inflated cost S, in 5 years, of an item, good or service, where C is the current price of that item in that country's currency and where the inflation rate is r%. Choose any value of C, the current price of an item in that country’s currency, that you would like.

Include in your post the country, the inflation rate, the type of currency, a value of C of your choice, and the calculations needed to find the approximated inflated rate of C after 5 years.