1) State the domain of the following and provide a brief explanation for your answer:

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? Write your answers in terms of x2 and/or x.

a)



Answer:

b)



Answer:

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



P

a) If *h*(*x*) *= f*(*x*) *+ 2*, 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 and 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 to graph the function by plotting the points found in the table in part b.

Answer:

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

a) 

Horizontal:

Vertical:

b) 

Horizontal:

Vertical:

c)



Horizontal:

Vertical:

d)



Horizontal:

Vertical: