

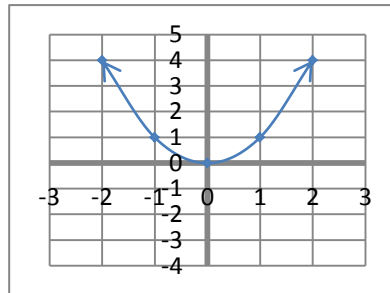
Name:

MTH133

Unit 4– Individual Project – A

1. Use the graph of  $f(x) = x^2$  to match the function to its corresponding graph. In words describe the transformation that occurs (ex: The graph of  $f(x)$  is shifted 6 units to the left).

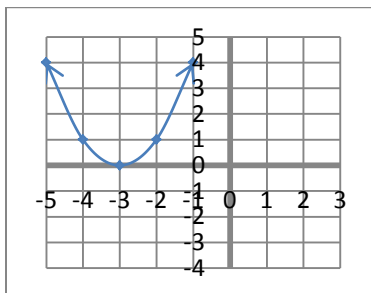
$$f(x) = x^2$$



Choose from the following functions:

$$g(x) = (x - 2)^2 ; \quad h(x) = x^2 - 2 ; \quad i(x) = (x + 3)^2 ; \quad j(x) = (x + 1)^2 + 3$$

a)

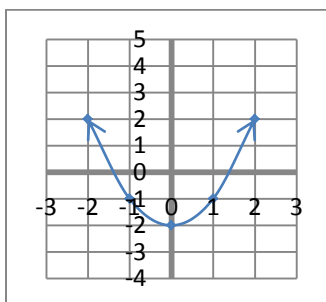


Answer:

Function:

Description of transformation:

b)

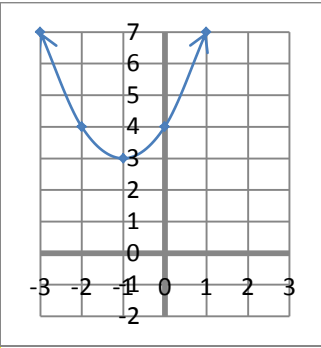


Answer:

Function:

Description of transformation:

c)

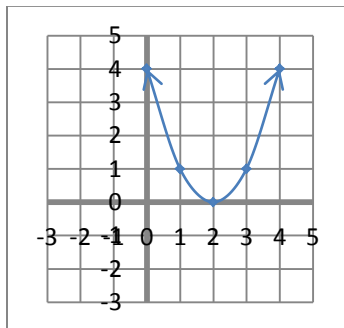


Answer:

Function:

Description of transformation:

d)



Answer:

Function:

Description of transformation:

2. Find the domain of the function and express the answer in interval notation. Explain in words or show the calculations.

a)  $f(x) = 4x^2 - 7x + 3$

Answer:

Show Work or Explain in Words:

b)  $g(x) = \frac{10}{x+7}$

Answer:

Show Work or Explain in Words:

$$c) f(x) = \sqrt{4x - 16}$$

Answer:

Show Work or Explain in Words:

$$d) g(x) = \frac{2x}{x-3}$$

Answer:

Show Work or Explain in Words:

$$e) f(x) = 3x - 9$$

Answer:

Show Work or Explain in Words:

3. Find the specified asymptotes of the following functions. Recall that asymptotes are lines therefore the answer must be given as an equation of a line.

a) Find the vertical asymptote of the function  $f(x) = \frac{4}{x+5}$

Answer:

Show Work or Explain in Words:

b) Find the horizontal asymptote of the function  $g(x) = \frac{5x^2-4}{x+1}$

Answer:

Show Work or Explain in Words:

c) Find the vertical and horizontal asymptotes of the function  $f(x) = \frac{3x-1}{x+4}$

Answer:

Vertical:

Horizontal:

Show Work or Explain in Words:

d) Find the vertical and horizontal asymptotes of the function  $g(x) = \frac{x+7}{x^2-4}$

Answer:

Vertical:

Horizontal:

Show Work or Explain in Words: