MAT3-119 Calculus of a Single Variable I

Quiz 1 October 28, 2015

Solution

name

You must show your work for full credit on this quiz.

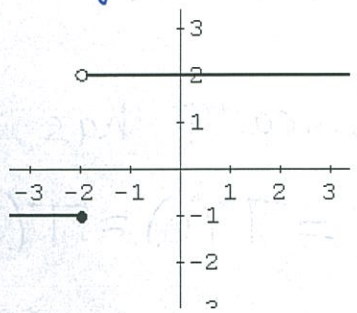
1. (3 pts.) Let f be the function given by the rule: $f(x) = \frac{1}{x-2} + \sqrt{x}$ $x \geq 0$, $x \neq 2$

Find the natural domain of f.

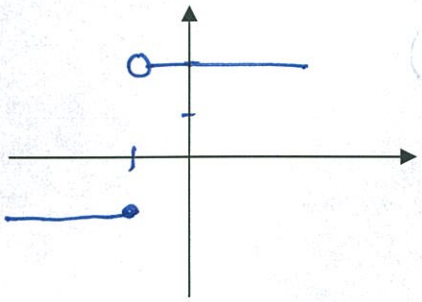
$[0,2) \cup (2,\infty)$ or $0 \leq x < 2 \cup 2 < x$

or All real numbers greater than or equal to 0 except $x=2$.

2. (6 pts.) Let the graph of g(x) pictured here:

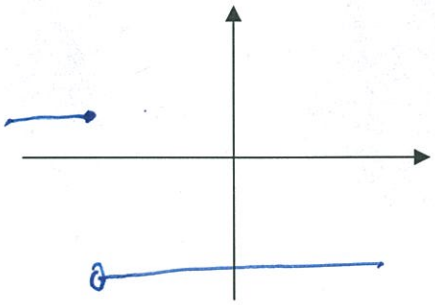


a. Sketch the graph of g(x-1)



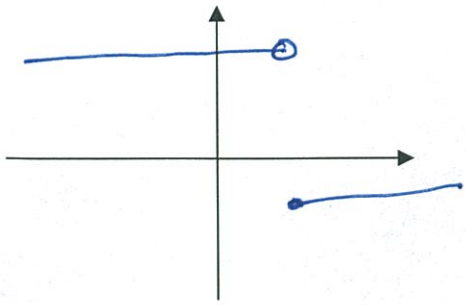
hor. sh. 1 right

b. Sketch the graph of -g(x)



refl across x axis

c. Sketch the graph of g(-x)



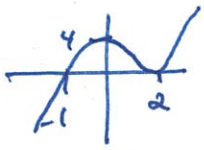
refl. across y axis

3. (2 pts.) Let $h(t) = (t + 1)(t-2)^2$. Is h even, odd, or neither? Justify your answer.

3 good approaches

neither

① Graph



not sym.

② $h(1)=2$, $h(-1)=0$) would have to either be equal or negs.

③ $h(t)=(t+1)(t^2-4t+4) = t^3-3t^2+4$ not pure even or odd.

4. (2 pts.) Suppose that the function T has period 5 and that T(0) = 2. Evaluate T(10).

since T has period 5,

$2 = T(0) = T(2 \cdot 5) = T(10)$