Piecewise: Analytic View Practice 1

This is a practice understanding of piecewise functions from an analytic viewpoint.

Problem 1 *Determine if the following piecewise definition is a function or not.*

$$f(x) = \begin{cases} -3\sqrt{|x+4|}+5 & -13 \le x \le -7 \\ \ln(|x+2|+1)+4 & -5 \le x \le 2 \\ -e^{(x-5)}+2 & -1 \le x \le 0 \end{cases}$$

If the above piecewise definition is a function, enter 1. *If it is not a function, then enter* 0. $\boxed{0}$

Feedback(attempt): *To know if the definition is a function you need to check the domains (listed in the right most column) and see if there are any overlapping values between any of the rows. If there are any overlapping values, then you need to check the overlapping values in both functions where those domains overlap, to see if you get the same values or not. If there are no overlapping x-values, or you get the same values in both functions for overlapping x-values, then the definition is a function. If you don't, then it isn't.*

Problem 2 *Determine if the following piecewise definition is a function or not.*

$$f(x) = \begin{cases} 2\,e^{(x-5)}+5 & 8 \le x \le 11 \\ -3\,x-10 & 14 \le x \le 15 \\ -2\sqrt{|x-3|}-3 & 15 \le x \le 22 \end{cases}$$

If the above piecewise definition is a function, enter 1. *If it is not a function, then enter* 0. $\boxed{0}$

Feedback(attempt): *To know if the definition is a function you need to check the domains (listed in the right most column) and see if there are any overlapping values between any of the rows. If there are any overlapping values, then you need to check the overlapping values in both functions where those domains overlap, to see if you get the same values or not. If there are no overlapping x-values, or you get the same values in both functions for overlapping x-values, then the definition is a function. If you don't, then it isn't.*

Problem 3 *Determine if the following piecewise definition is a function or not.*

$$f(x) = \begin{cases} -2\,(x-3)^2-5 & -13 \le x \le -7 \\ 3\,\ln(|x+3|+1)-5 & -9 \le x \le -6 \\ 3\,e^{(x+2)}+1 & -8 \le x \le -5 \end{cases}$$

If the above piecewise definition is a function, enter 1. *If it is not a function, then enter* 0. $\boxed{0}$

Feedback(attempt): *To know if the definition is a function you need to check the domains (listed in the right most column) and see if there are any overlapping values between any of the rows. If there are any overlapping values, then you need to check the overlapping values in both functions where those domains overlap, to see if you get the same values or not. If there are no overlapping x-values, or you get the same values in both functions for overlapping x-values, then the definition is a function. If you don't, then it isn't.*

Learning outcomes:

Problem 4 *Determine if the following piecewise definition is a function or not.*

$$f(x) = \begin{cases} -3\,x - 11 & -15 \le x \le -8 \\ -\ln\left(|x-4|+1\right) - 1 & -14 \le x \le -9 \\ -\sqrt{|x-4|} + 1 & -5 \le x \le -2 \end{cases}$$

If the above piecewise definition is a function, enter 1. *If it is not a function, then enter* 0. $\boxed{0}$

Feedback(attempt): *To know if the definition is a function you need to check the domains (listed in the right most column) and see if there are any overlapping values between any of the rows. If there are any overlapping values, then you need to check the overlapping values in both functions where those domains overlap, to see if you get the same values or not. If there are no overlapping x-values, or you get the same values in both functions for overlapping x-values, then the definition is a function. If you don't, then it isn't.*

Problem 5 *Determine if the following piecewise definition is a function or not.*

$$f(x) = \begin{cases} \ln\left(|x|+1\right) - 2 & -15 \le x \le -14 \\ 2\,x + 5 & -10 \le x \le -6 \\ -3\,\sqrt{|x+5|} + 4 & -1 \le x \le 0 \end{cases}$$

If the above piecewise definition is a function, enter 1. *If it is not a function, then enter* 0. $\boxed{1}$

Feedback(attempt): *To know if the definition is a function you need to check the domains (listed in the right most column) and see if there are any overlapping values between any of the rows. If there are any overlapping values, then you need to check the overlapping values in both functions where those domains overlap, to see if you get the same values or not. If there are no overlapping x-values, or you get the same values in both functions for overlapping x-values, then the definition is a function. If you don't, then it isn't.*
