

Math 1300
Fall 2025
Quiz 2

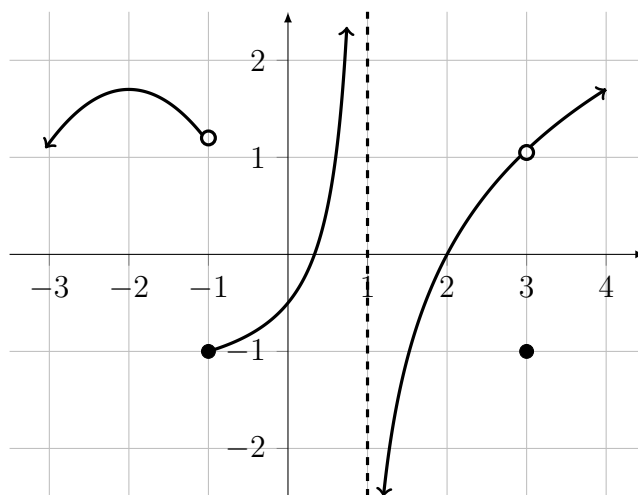
Name: _____

1. (2 points) Consider the function

$$g(x) = \begin{cases} x^2 - 6x + 13, & \text{if } x \leq 2, \\ 5x + k, & \text{if } x > 2. \end{cases}$$

What value of k would make g continuous?

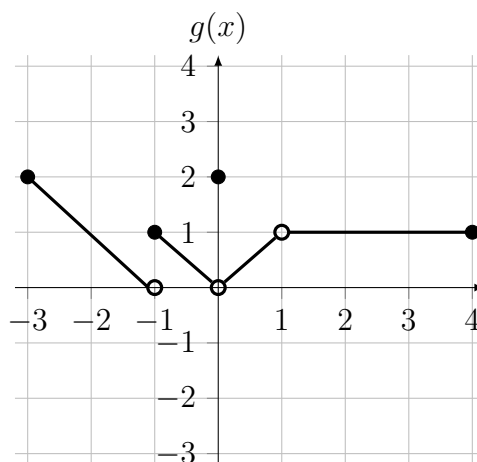
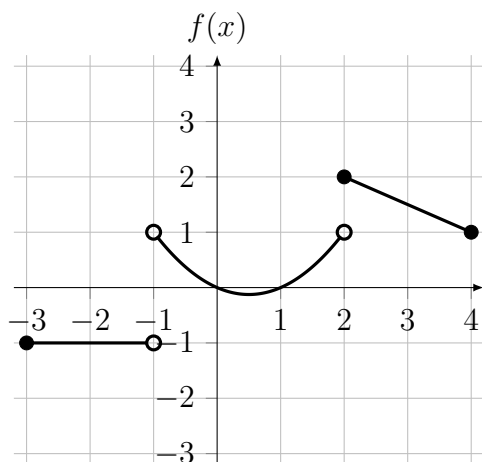
- (a) -8
 - (b) -5
 - (c) -2
 - (d) 0
 - (e) 3
2. (2 points) Use the following graph of the function f to answer the question below.



At $x = -1$, the function f

- (a) is continuous.
- (b) is undefined.
- (c) has an infinite discontinuity.
- (d) has a removable discontinuity.
- (e) has a jump discontinuity.

3. (6 points) Use the following graphs of the functions $f(x)$ and $g(x)$ to answer the questions below:



- (a) Evaluate the following limit, if it exists. Otherwise, write DNE.

$$\lim_{x \rightarrow -1^+} (f(x) + g(x))$$

Answer:

- (b) Evaluate the following limit, if it exists. Otherwise, write DNE.

$$\lim_{x \rightarrow 1} 3g(x)$$

Answer:

- (c) Evaluate the following limit, if it exists. Otherwise, write DNE.

$$\lim_{x \rightarrow -1} (f(x))^2$$

Answer: