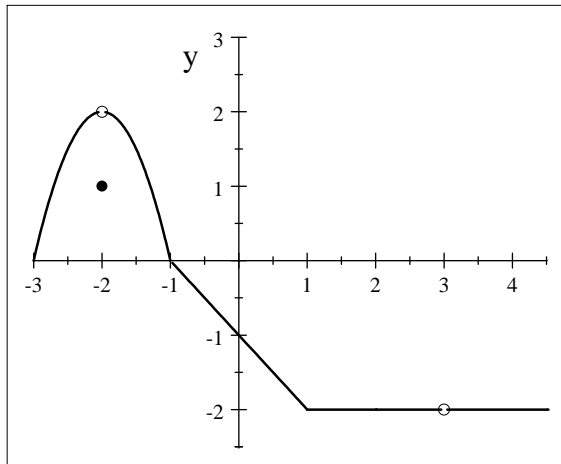


Show your work in details and provide reasons to support your answers.

1. (1pt) State the **definition of derivative** of a function f at $x = a$.

2. (4pts) The graph of $f(x)$ is given below. Find all values of x at which $f(x)$ is not **differentiable** and describe mathematically for each x why $f(x)$ is not differentiable.



$y = f(x)$

3. (4pts) Find $f'(1)$ where $f(x) = \sqrt{3x + 1}$.

4. (4pts) Compute $f'(x)$ where $f(x) = x^2 - 2x + 1$.