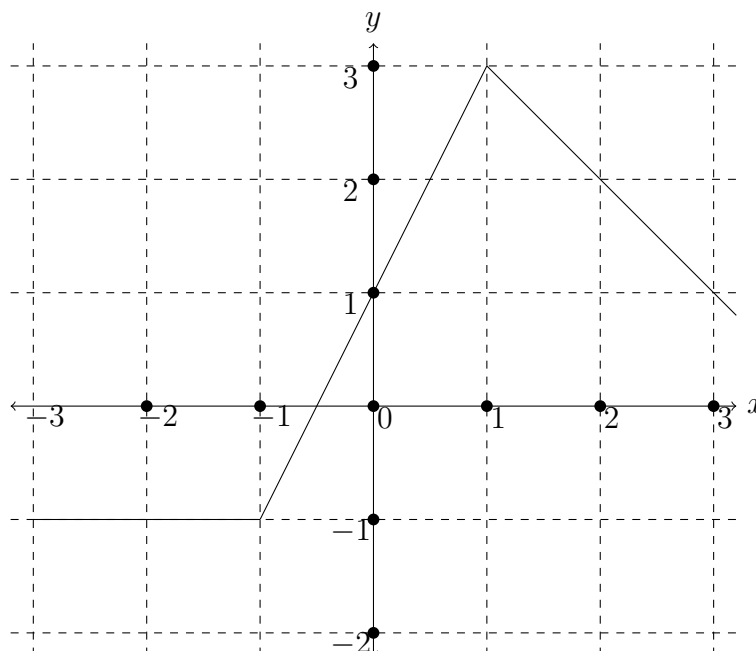

The Derivative as a Function

Solutions should show all of your work, not just a single final answer.

- Let $f(x)$ be a differentiable function. Write down the definition of $f'(x)$.
- The graph of $y = f(x)$ is pictured below.



- Compute the following derivatives. If it does not exist, write DNE.

(i) $f'(-2)$	(iii) $f'(-1)$	(v) $f'(0)$
(ii) $f'(1)$	(iv) $f'(2)$	(vi) $f'(3)$
 - Sketch a graph of the derivative $f'(x)$.
- Find the derivative of $f(x) = \sqrt{3-x}$ using the definition of the derivative (no credit if any other method is used).
 - Find the derivative of $f(x) = \frac{8}{x^2}$ using the definition of the derivative (no credit if any other method is used).
 - T/F (with justification) If f is continuous at a , then f is differentiable at a .
 - T/F (with justification) If $f'(2)$ exists, then $\lim_{x \rightarrow 2} f(x) = f(2)$.