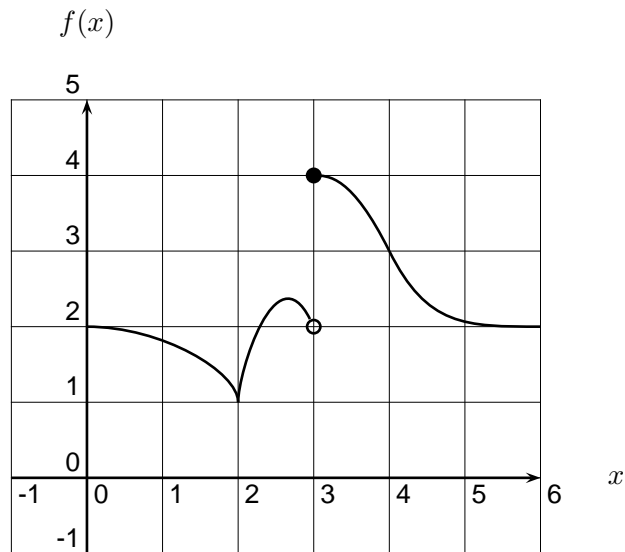9. A function f is defined on the interval $[0, 6]$. The graph of $y = f(x)$ is shown below.

$f(x)$

(a) (2 points) On which intervals does it appear that f is continuous?

(b) (3 points) On which intervals does it appear that f is differentiable?

(c) (3 points) Does $\lim_{x \to 3} f(x)$ exist? If so, estimate it; if not, explain why.

(d) (4 points) Estimate $f'(4)$ and find an equation of the tangent line to the graph of f at $x = 4$.