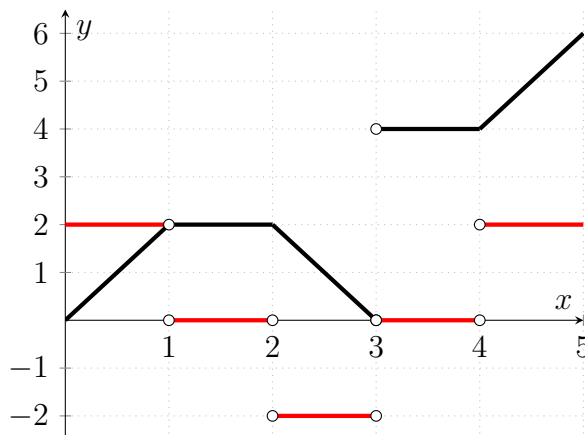


Name: _____ Academic Integrity Signature: _____

I have abided by the UNCG Academic Integrity Policy.

Note: Correct numerical answers without justification will receive little or no credit.

1. (6 points) The curve $y = f(x)$ is graphed below. On the same set of axes, sketch the derivative $y = f'(x)$. Be sure to mark open circles at points where the derivative is undefined.



Solution: The derivative is graphed above in red.

2. (4 points) Answer each question by circling True if it must be true and False if it is ever false. No justification is required.

- True | False: If u and v are differentiable functions, then

$$\frac{d}{dx}(uv) = \frac{du}{dx} \frac{dv}{dx}.$$

- True | False: If u and v are differentiable functions, then

$$\frac{d}{dx}(u+v) = \frac{du}{dx} + \frac{dv}{dx}.$$

- True | False: If n is any real number, then

$$\frac{d}{dx}(x^n) = nx^{n-1},$$

for all x where the powers x^n and x^{n-1} are defined.

- True | False: The derivative of the exponential function is

$$\frac{d}{dx}(e^x) = xe^{x-1}.$$