4. [10 points] A function $f(x)$ is defined and differentiable on the interval $0 < x < 10$. In addition, $f(x)$ and $f'(x)$ satisfy all of the following properties:

- $f'(x)$ is continuous on the interval $0 < x < 10$.
- $f'(1) = 2$.
- $f'(x)$ is differentiable on the interval $1 < x < 5$.
- $f(x)$ is concave up on the interval $3 < x < 5$.
- $f(x)$ has a local minimum at $x = 4$.
- $f(x)$ is decreasing on the interval $6 < x < 8$.
- $f(x)$ has an inflection point at $x = 7$.
- $f'(x)$ is not differentiable at $x = 9$.

On the axes provided below, sketch a possible graph of $f'(x)$ (the **derivative** of $f(x)$) on the interval $0 < x < 10$.

Make sure your sketch is large and unambiguous.

> *Solution:* One possible solution is shown below.

Graph of $y = f'(x)$