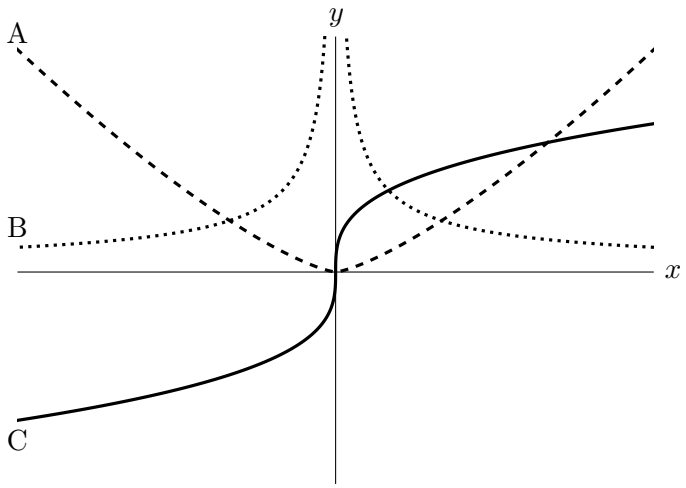
5. [4 points] Shown below are portions of the graphs of $y = f(x)$, $y = f'(x)$, and $y = f''(x)$. Note that the dotted graph has a vertical asymptote at $x = 0$. Determine which graph is which, and then, on the answer lines below, indicate after each function the letter A, B, or C that corresponds to its graph. No work or justification is needed.



Answer: $f(x)$: _____

$f'(x)$: _____

$f''(x)$: _____

6. [7 points] The function $q(x)$ is given by the following formula, where c and m are constants:

$$q(x) = \begin{cases} c - 4x - x^2 & -3 \le x \le 0 \\ mx & 0 < x \le 2. \end{cases}$$

a. [4 points] Assuming $c = -3$ and $m = 2$, find the x-values of all global minima and global maxima of $q(x)$ on the interval $[-3, 2]$. If there are none of a particular type, write NONE. Use calculus to find and justify your answers, and show your work.

Answer: Global min(s) at $x =$ _____ and Global max(es) at $x =$ _____

b. [3 points] Find one pair of values for c and m such that $q(x)$ is differentiable at $x = 0$. Show your work.

Answer: $c =$ _____ and $m =$ _____