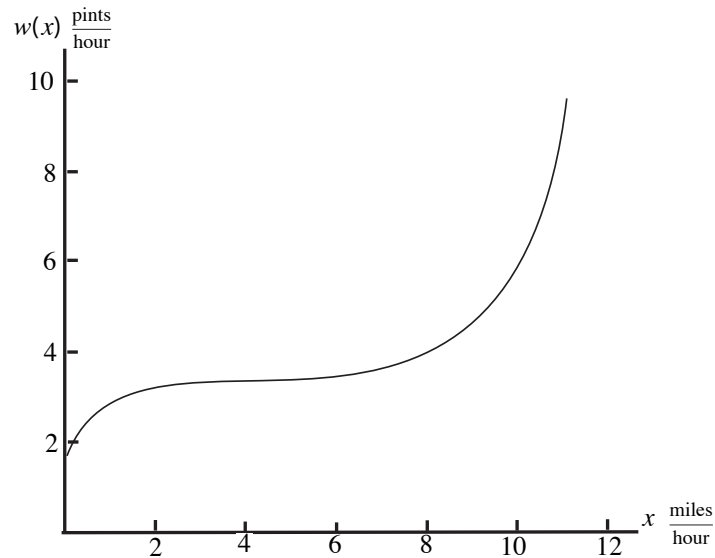


5. (12 points) Running a marathon takes a lot of energy. In order to keep up her energy level, Ellen drinks WolverineAid. Let $W(x)$ represent the number of pints of WolverineAid that Ellen must consume per hour when running at a rate of x miles per hour. The graph of $W(x)$ is given below.



- (a) Let $C(x)$ represent Ellen's consumption of WolverineAid in pints per mile. How is $C(x)$ related to $W(x)$?
- (b) Use calculus to show that $C(x)$ has a critical point at $x = x_0$ when $W'(x_0) = C(x_0)$. (Show your work.)
- (c) From the graph, approximate the pace that Ellen should run in order to get the most efficient use of the WolverineAid. Explain your answer.