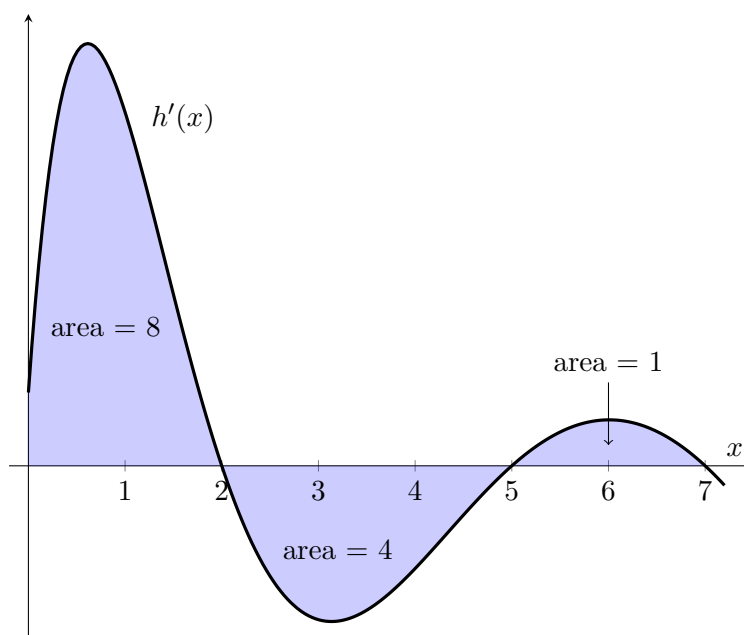


## Written Homework 3

Math 126

Solve each of the following problems. Write your solutions clearly and neatly on separate paper, explaining your reasoning with complete sentences. Submit your work either in class or in the homework mailbox (RMS level 3, near the fireplace) by 4:00pm on **Monday, September 16**.

1. The following figure shows the graph of the derivative  $h'(x)$  of a function  $h(x)$ . Suppose that  $h(0) = 2$ . Sketch the graph of  $h(x)$  on the interval  $0 \leq x \leq 7$ . On your graph, indicate all critical points of  $h$  (that is, points where  $h'(x) = 0$ ) and give their coordinates. Also indicate all points of inflection, and give their coordinates. Explain in words how you know that your critical points and points of inflection are correct.



2. Let  $F(x) = \int_1^x \cos(t) dt$ . Find the value(s) of  $x$  between 0 and  $\pi$  at which  $F(x)$  has a local maximum or a local minimum. Explain your reasoning.