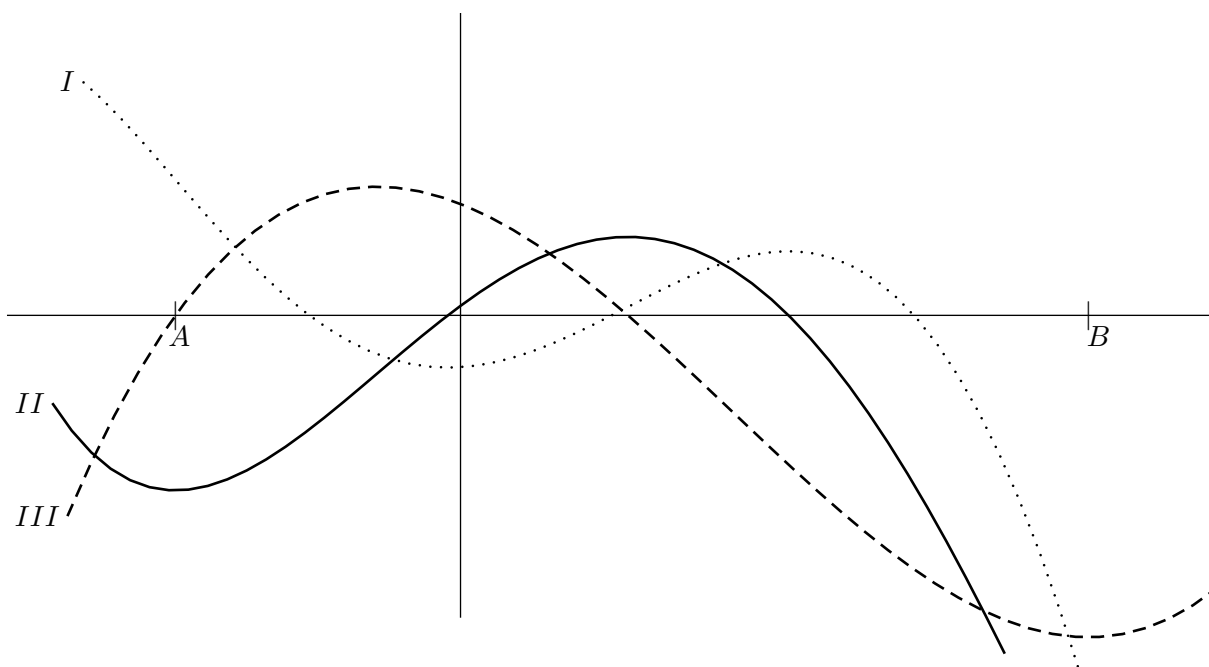


1. (8 points) On the axes below are graphed f , f' , and f'' . Determine which is which, and justify your response with a brief explanation.



I : f

II : f'

III : f''

Explanation:

The function III achieves a minimum at $x = B$ (marked in the figure above); since neither I nor II is 0 there, III must be f'' . This tells us that f'' is 0 at the point marked A in the graph. Since the curve II achieves a minimum at $x = A$ while I clearly has non-zero derivative there, II must be f' . This in turn implies that I must be f .
 [Note: there are many answers for this part of the question.]