

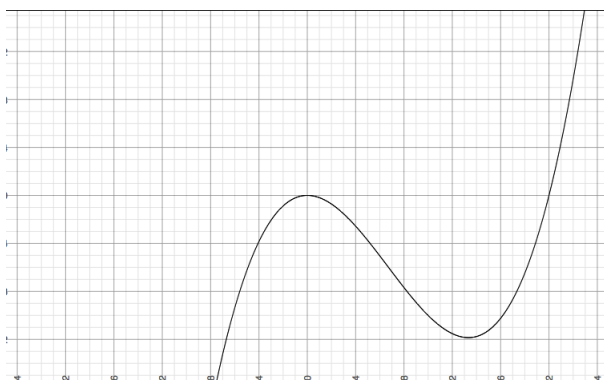
1. If  $f(x)$  is a differentiable function and we have  $f(2) = 1$  and  $f'(2) = -1$ , then evaluate the derivative of the function

$$g(x) = \frac{x^2 + 1}{f(x)} \quad (1)$$

at  $x = 2$ .

hint: Use quotient rule.

2. The graph of  $f(x)$  is given as follow. Sketch a graph corresponding to  $f'(x)$ .



3. Find  $x$  such that the line tangent to the function  $f(x) = xe^x$  is parallel with x-axis.  
Hint: The tangent line to a function  $f(x)$  is parallel with x-axis at point  $x = a$  when  $f'(a) = 0$ .