

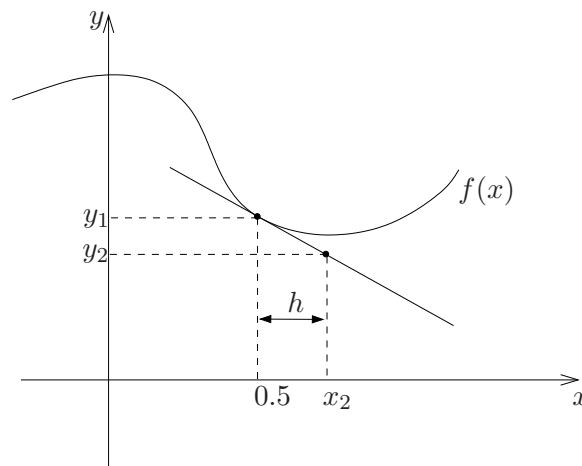
7. (7 points) Use the function

$$g(x) = x^{\sin(x)}$$

to give the *limit definition* for $g'(2)$ [No need to simplify or approximate the limit.]

$$g'(2) = \lim_{h \rightarrow 0} \frac{(2+h)^{\sin(2+h)} - 2^{\sin(2)}}{h}$$

8. (7 points) The figure below shows $y = f(x)$ and a line tangent to f at $x = 0.5$. Given that $f(0.5) = 2$, $f'(0.5) = -3$, and $h = 0.1$, determine the values of y_1 , y_2 , and x_2 . [Note: x and y are different scales on the graph.]



$$y_1 = \underline{\quad 2 \quad}$$

$$y_2 = \underline{\quad 1.7 \quad}$$

$$x_2 = \underline{\quad 0.6 \quad}$$