

NAME:

BLOCK:

## AP ESSENTIAL CALCULATOR SKILLS – SAMPLE SET

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1. Consider the function  $f(x) = -2 + 0.05xe^{(2+\cos x)}$  on the domain  $[0, 10]$ .

Graph the function  $f(x)$  and **find** the zero(s) on  $[0, 10]$ . (Round to three decimal places)

2. Find the derivative of  $y = -2 + 0.05xe^{(2+\cos x)}$  at  $x = 0.4$  (Round to three decimal places)

3. Let  $f(x) = x^{\sin x} + \tan^{-1}(\ln(x^2 + 4))$ .

Use the graph of the derivative to count the number of zeros of  $f'(x)$  on the domain  $[0, 4]$ .

Provide a very rough sketch of the derivative function on the  $x \times y$  window  $[0, 4] \times [-5, 5]$