Quiz 5: Sections 3.3, 3.4, and 3.5 **Name:** Key

Instructions: Show all work and simplify your answers! Correct answers without work will receive zero points. Also, points will be taken from messy solutions. **Good Luck!** ☺

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1. The position of a person moving around a sidewalk is given by

(3 points)

$$p(t) = t^2 + \sqrt{t} + \tan(t^3 + 5).$$

How can we interpret $p'(t)$ (i.e. what does $p'(t)$ tell us)?

$p'(t)$ is the rate of change of position of the person (aka the person's velocity)

2. Find the derivative of $f(x) = \dfrac{e^x}{3 - x}$.

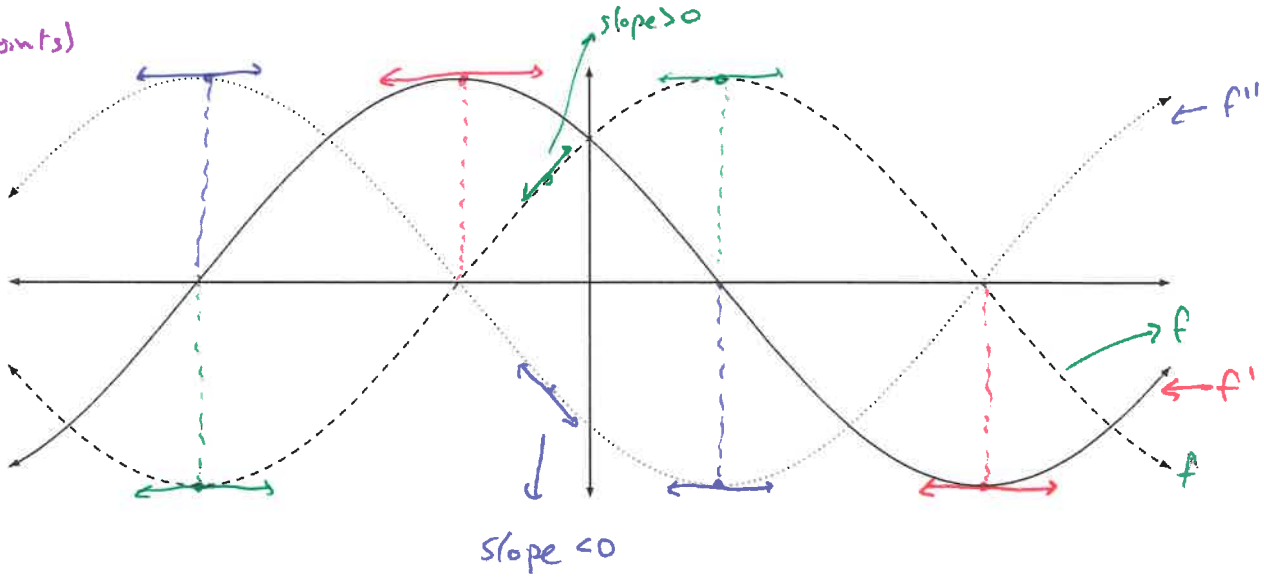
(7 points)

$$f'(x) = \frac{e^x(3-x) - (-1)e^x}{(3-x)^2}$$

$$= \frac{4e^x - xe^x}{(3-x)^2}$$

3. The following are the graphs of f, f', and f''. Identify them by clearly labelling which function each graph is.

(6points)



f f' f''