Exam Review
Supplemental Instruction
Iowa State University

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Course/Instructor: Math 165 / Peters
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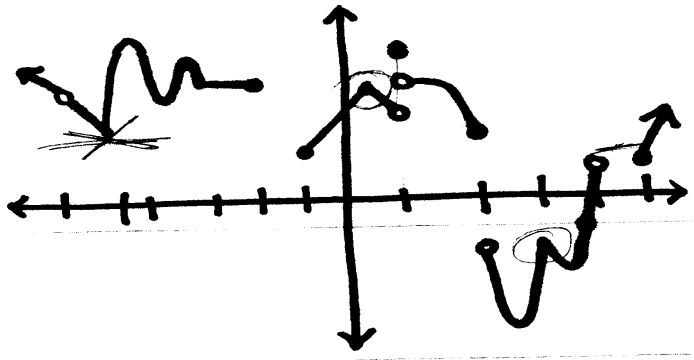
(17) a. At what x-value(s) does the limit not exist?
b. On what intervals is the function continuous?
c. Where does the derivative not exist?



(18) Find the equation of the tangent line to $y = \frac{1}{x+1}$ at $(1, \frac{1}{2})$. $y - \frac{1}{2} = -\frac{1}{4}(x-1)$

Find $\frac{dy}{dx}$:

(19) $y = \frac{100}{x^5} = -500x^{-6}$ (20) $y = \pi x^7 - 2x^3 - 5x^2 + \pi x + \pi^2$ $= 7\pi x^6 - 6x^2 - 10x + \pi$

(21) $y = (5x^2 - 7)(3x^2 - 2x + 1)$ (22) $y = \frac{x\cos x + \sin x}{x^2 + 1}$

(23) $y = \sin^4(3x^2)$ (24) $y = \frac{2x-3}{(x^2+4)^2}$

Find f''':

(25) $f(x) = \sin(x^3)$ (26) $f(x) = \frac{3x}{1-x}$