Math 130, Day 19, Due in Lab. Name: Answers

0. Do WeBWorK Set Day 19. Due Sunday night.

1. Determine these derivatives. Use proper notation. These should take a minute each, once you get the idea.

a) $D_x(\cos(3x)) =$ $-\sin u \frac{du}{dx} = -\sin(3x)\cdot 3 = -3\sin(3x)$

$\cos u$

b) $D_x(\sec(3x^2)) =$ $\sec u \tan u \frac{du}{dx} = \sec(3x^2)\tan(3x^2)\cdot 6x$

$\sec u$

$u = 3x^2$

$= 6x\sec(3x^2)\tan(3x^2)$

c) $D_x(\tan^4 x) =$ $D_x((\tan x)^4) = 4u^3\cdot\frac{du}{dx} = 4\tan^3 x\cdot\sec^2 x$

u^4

$u = \tan x$

d) $D_x[\tan(x^4)] =$ $\sec^2 u\cdot\frac{du}{dx} = \sec^2(x^4)\cdot 4x^3 = 4x^3\sec^2 x^4$

$\tan u$

$u = x^4$

e) $D_s(e^{2s^4+s}) =$ $e^u\frac{du}{ds} = e^{2s^4+s}\cdot(8s^3+1) = (8s^3+1)e^{2s^4+s}$

e^u

$u = 2s^4+s$