

Take the derivatives. Do not simplify.

1.  $y = \sin(\cos(x^2))$

2.  $y = e^{x^3+4x^2-x+1} + \tan x$

3.  $y = \ln(-3x^{-2} + 4x)$

4.  $y = \sec\left(\frac{x^2-x+1}{\tan x}\right)$

5.  $z = e^t + t^e + e^e$  (Find  $\frac{dz}{dt}$ )

6.  $h = \arctan(e^x)$

$$7. y = (\sin x)(x^3 - 2x + 5)^{100}$$

$$8. y = \sqrt{\frac{\csc x + 1}{\cot x + 1}}$$

$$9. y = x^x$$

$$10. y = x^4 + 4^x + 4^4 + x^x$$