

1. Compute the derivatives.

(a)  $y = \sin^{-1}(7x)$

(e)  $y = \tan^{-1}\left(\frac{x}{3}\right)$

(b)  $y = \cos^{-1}(x^2)$

(f)  $y = e^{\cos^{-1} x}$

(c)  $y = x \tan^{-1} x$

(g)  $y = \frac{\cos^{-1} x}{\sin^{-1} x}$

(d)  $y = \sin^{-1}(e^x)$

(h)  $y = \tan^{-1}\left(\frac{1+t}{1-t}\right)$

2. Compute the derivatives.

(a)  $y = \cos^{-1}(x + \sin^{-1} x)$

(f)  $y = \tan(\sec(\cos t))$

(b)  $y = (\tan^{-1} x)^3$

(g)  $s(t) = \sqrt{\frac{1 + \sin t}{1 + \cos t}}$

(c)  $y = x \sin^{-1} x + \sqrt{1 - x^2}$

(h)  $f(z) = e^{z/(z-1)}$

(d)  $y = \cos^{-1}(\sin^{-1} t)$

(i)  $y = e^{e^x}$

(e)  $y = \cot^2(\sin \theta)$

(j)  $y = xe^{-x^2}$