

1. Find  $\frac{dy}{dx}$  if  $3x^{-2}\sqrt{y} - e^y = \frac{1}{x}$ .

2. Find  $\frac{dy}{dx}$  if  $6x^2y^3 + \tan^{-1}(y) = \sin(x)$ .

3. Find  $\frac{dy}{dx}$  if  $x \cos(4y) - y^5 = 12 - y$ .