

# Product and Quotient Rule

## 1 Differentiate the following functions;

1.  $y = x^2 \sin x$

2.  $y = x^3 \cos x$

3.  $y = 3x^4 \ln x$

4.  $y = x^3 e^x$

5.  $y = (3x + 5)e^x$

6.  $y = x^2(3x + 5)$

7.  $y = (x^2 + 1) \ln x$

8.  $y = 5x \cos x$

9.  $y = \frac{3x+2}{5x-1}$

10.  $y = \frac{6x-3}{2x-5}$

11.  $y = \frac{4x+2}{x+2}$

12.  $y = \frac{e^x}{x}$

13.  $y = \frac{\sin x}{x}$

14.  $y = \frac{x^2+3}{3x^2-5}$

15.  $y = \frac{3x^2+5x}{6x-2}$