

1 Chain Rule

1. Find $\frac{dy}{dx}$ for each of the following

(i) $y = (3x^2 - 8)^4$

(ii) $y = e^{4x^5}$

(iii) $y = \ln(5x^4 - 3x^2 - 1)$

(iv) $y = \sqrt{x^2 + 7}$

(v) $y = \sin(8x^3 - 5)$

(vi) $y = \cos^3 x$.

2. Find $\frac{dy}{dx}$ for each of the following

(i) $y = (2x^3 - 5)^8$

(ii) $y = e^{4\sin x}$

(iii) $y = \ln(3x^3 - 5x^2 - 1)$

(iv) $y = \sqrt{2x^3 + 9}$

(v) $y = \cos(4x^2 - x + 3)$

(vi) $y = \sin^3 x$.