Chain Rule 1

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

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

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

(i)
$$y = (3x^2 - 8)^4$$
 (ii) $y = e^{4x^5}$ (iii) $y = \ln(5x^4 - 3x^2 - 1)$

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

(iv)
$$y = \sqrt{x^2 + 7}$$
 (v) $y = \sin(8x^3 - 5)$ (vi) $y = \cos^3 x$.

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

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

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

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

(ii)
$$y = e^{4\sin x}$$
 (iii) $y = \ln(3x^3 - 5x^2 - 1)$

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

(iv)
$$y = \sqrt{2x^3 + 9}$$
 (v) $y = \cos(4x^2 - x + 3)$ (vi) $y = \sin^3 x$.

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