Y1 Differentiation

Question 1

A curve has equation

$$y = 2x^3 - 2x^2 - 2x + 8$$

Find $\frac{dy}{dx}$

Question 2

The curve C has equation $y = 3x^4 - 8x^3 - 3$

Find $\frac{dy}{dx}$.

Question 3

Given that $y = \frac{2}{5}x^5 - \frac{20}{3}x^3 + 50x + 3$, find $\frac{dy}{dx}$.

Question 4

A curve C has equation

$y = x^2 - 2x - 24\sqrt{x}, \quad x > 0$

Find $\frac{dy}{dx}$

Question 5

Given that $y = x^5 + \frac{1}{x^2}$, find $\frac{dy}{dx}$.

Question 6

Given that

$$y = 2x^{-3} - 5x^{\frac{1}{2}}$$

find $\frac{dy}{dx}$

Question 7

Given that

$$y = \frac{2}{3}x^{-5} - 2x^{-\frac{1}{2}}$$

find $\frac{dy}{dx}$

Question 8

Given that

$$y = 7 - x^{-\frac{4}{5}} + 6x$$

find $\frac{dy}{dx}$

Question 9

Given that $y = 6x^3 + \frac{4}{\sqrt{x}} + 5x$ find $\frac{dy}{dx}$

Question 10

Given that

$$y = \frac{5}{x^2} - \frac{1}{4x} + x$$

find $\frac{dy}{dx}$.

Question 11

The curve C has equation

$y = (x + 1)(x + 3)^2$,

Find $\frac{dy}{dx}$, simplifying your expression.

Question 12

Find $\frac{dy}{dx}$ when $y = \frac{(3x)^2 \times x^4}{x}$