(111) *(a)* Given that $y = 2x^2 - 5x + 3$, find $\frac{dy}{dx}$ from first principles. [5]

(b) Find the equation of the normal to the curve $y = 2x^2 - 5x + 3$ at the point (2, 1). [3]

Jan 07

(112) Given $y = x^2 - 12x + 10$, find $\frac{dy}{dx}$ from first principles. [5]

June 07

(113) *(a)* Given that $y = 3x^2 - 4x + 7$, find $\frac{dy}{dx}$ from first principles. [5]

(b) Differentiate $5\sqrt{x} - \frac{3}{x^3}$ with respect to x. [2]

Jan 08

(114) *(a)* Given that $y = 5x^2 + 3x - 4$, find $\frac{dy}{dx}$ from first principles. [5]

(b) Given that $y = \frac{8}{x} + 3\sqrt{x}$, find the value of $\frac{dy}{dx}$ when $x = 4$. [4]

June 08

(115) *(a)* Given that $y = 7x^2 + 5x - 2$, find $\frac{dy}{dx}$ from first principles. [5]

(b) Differentiate $\frac{2}{x^3} + 5x^{\frac{2}{3}}$ with respect to x. [2]

Jan 09

(116) *(a)* Given that $y = 4x^2 - 5x - 3$, find $\frac{dy}{dx}$ from first principles. [5]

(b) Differentiate $7x^{\frac{3}{4}} - \frac{2}{x^4}$ with respect to x. [2]

June 09

(117) *(a)* Given that $y = 3x^2 - 7x - 5$, find $\frac{dy}{dx}$ from first principles. [5]

(b) Given that $y = ax^{\frac{5}{2}}$ and $\frac{dy}{dx} = -2$ when $x = 4$, find the value of the constant a. [3]

Jan 10

(118) *(a)* Given that $y = -x^2 + 5x - 9$, find $\frac{dy}{dx}$ from first principles. [5]

(b) Given that $y = \frac{3}{4}x^{\frac{1}{3}} + \frac{12}{x^2}$, find the value of $\frac{dy}{dx}$ when $x = 8$. [4]

June 10

(119) *(a)* Given that $y = 6x^2 + 4x - 9$, find $\frac{dy}{dx}$ from first principles. [5]

(b) Differentiate $\frac{3}{x^4} - 7x^{\frac{1}{3}}$ with respect to x. [2]

Jan 11

(120) *(a)* Given that $y = 7x^2 - 5x + 2$, find $\frac{dy}{dx}$ from first principles. [5]

(b) Differentiate $4x^{\frac{2}{5}} - \frac{9}{x} - 6$ with respect to x. [2]

June 11