



Phone: +442081445350

[www.chemistryonlinetuition.com](http://www.chemistryonlinetuition.com)

Email: [asherrana@chemistryonlinetuition.com](mailto:asherrana@chemistryonlinetuition.com)

# PURE MATH

## ALGEBRA AND FUNCTION

Level & Board	EDEXCEL (A-LEVEL)
TOPIC:	DIFFERENTIATION
PAPER TYPE:	QUESTION PAPER - 1
TOTAL QUESTIONS	8
TOTAL MARKS	43

ChemistryOnlineTuition Ltd reserves the right to take legal action against any individual/ company/organization involved in copyright abuse.

**Questions****Q1.**

A curve has equation

$$y = 3x^2 + \frac{24}{x} + 2, \quad x > 0$$

(a) Find, in simplest form,  $\frac{dy}{dx}$

(3)

(b) Hence find the exact range of value of x for which the curve is increasing.

(2)

**(Total for question = 5 marks)**

**Q2.**

A curve has equation

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

(a) Find, in simplest form,  $\frac{dy}{dx}$

(3)

(b) Hence find the exact range of value of x for which the curve is increasing.

(3)

**(Total for question = 6 marks)**

I am Sorry !!!!!

**Q3.**

A curve has equation

$$y = -2x^2 + 4x + 1$$

(a) Find, in simplest form,  $\frac{dy}{dx}$

**(2)**

(b) Hence find the exact range of value of  $x$  for which the curve is increasing.

**(3)**

**(Total for question = 5 marks)**

CHEMISTRY ONLINE  
— TUITION —

I am Sorry !!!!!

**Q4.**

A curve has equation

$$y = 2\sin(3x)$$

(a) Find, in simplest form,  $\frac{dy}{dx}$

(3)

(b) Hence find the exact range of value of  $x$  for which the curve is increasing.

(3)

**(Total for question = 6 marks)**

**Q5.**

A curve has equation

$$y = 4e^{-0.5x}$$

(a) Find, in simplest form,  $\frac{dy}{dx}$

(2)

(b) Hence find the exact range of value of  $x$  for which the curve is increasing.

(2)

**(Total for question = 4 marks)**

**Q6.**

A curve has equation

$$y = \ln(2x)$$

**(a)** Find, in simplest form,  $\frac{dy}{dx}$

**(4)**

**(b)** Hence find the exact range of value of  $x$  for which the curve is increasing.

**(2)**

**(Total for question = 6 marks)**

CHEMISTRY ONLINE  
— TUITION —

I am Sorry !!!!!

**Q7.**

A curve has equation

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

**(a)** Find, in simplest form,  $\frac{dy}{dx}$ **(2)****(b)** Hence find the exact range of value of  $x$  for which the curve is increasing.**(2)****(Total for question = 4 marks)****Q8.**

A curve has equation

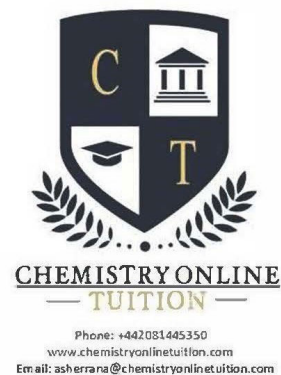
$$y = x^3 - 3x^2 + 2x + 1$$

**(a)** Find, in simplest form,  $\frac{dy}{dx}$ **(4)****(b)** Hence find the exact range of value of  $x$  for which the curve is increasing.**(3)****(Total for question = 7 marks)**

I am Sorry !!!!!



**DR. ASHAR RANA**



- Founder & CEO of Chemistry Online Tuition Ltd.
- Tutoring students in UK and worldwide since 2008
- CIE & EDEXCEL Examiner since 2015
- Chemistry, Physics, and Math's Tutor

---

## CONTACT INFORMATION FOR CHEMISTRY ONLINE TUITION

- UK Contact: 02081445350
  - International Phone/WhatsApp: 00442081445350
  - Website: [www.chemistryonlinetuition.com](http://www.chemistryonlinetuition.com)
  - Email: [asherrana@chemistryonlinetuition.com](mailto:asherrana@chemistryonlinetuition.com)
- Address: 210-Old Brompton Road, London SW5 OBS, UK