



**CHEMISTRY ONLINE**  
— **TUITION** —

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 - 11

TOTAL QUESTIONS

8

TOTAL MARKS

43

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**Questions****Q1.**

A curve has equation

$$y(x) = \sqrt{3x^2 + 2x - 1}$$

(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

$$f(x) = \ln(2x^2 + 3x - 4)$$

(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

$$g(x) = \sqrt{4x^3 + 5x^2 - 2x}$$

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

**(2)**

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

**(3)**

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

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**Q4.**

A curve has equation

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

(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

$$f(x) = \cos(4x^2 + 3x)$$

(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

$$y(x) = e^{-2x^2+5x}$$

(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)**

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**Q7.**

A curve has equation

$$f(x) = \sqrt{3x^2 + 2x + 1}$$

**(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.**(2)****(Total for question = 4 marks)****Q8.**

A curve has equation

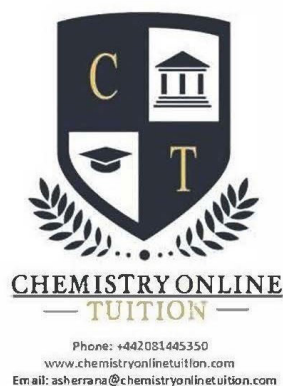
$$y(x) = \ln(4x^2 - 3x + 1)$$

**(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)**

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**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

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## 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