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# **PURE MATH**

### ALGEBRA AND FUNCTION

Level & Board	EDEXCEL (A-LEVEL)
TOPIC:	FACTOR THEOREM
PAPER TYPE:	QUESTION PAPER - 3
TOTAL QUESTIONS	8
TOTAL MARKS	44

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#### **Questions**

#### Q1.

$$f(x) = x^3 - 19x - 30$$

(a) Show that (x + 2) is a factor of f(x).

(3)

(b) Factorize f(x) completely.

(4)

#### (Total for question = 7 marks)

Q2.

The expression  $2x^3 + ax^2 + bx - 6$  when divided by x -2 and 2x + 3 leaves reminders of 28 and 0 respectively. Find the values of a and b. with these values a and b, factorize the given expression completely.

(5)

(Total for question = 5 marks)

Q3. Find the roots of the equation  $4x^3 - 8x^2 - 3x + 9 = 0$ 

(4)



**Q4**.

Show that (x-2) is a factor of  $x^3 + 2x^2 - 5x - 6$ .

(4) (Total for question = 4 marks)



I am Sorry !!!!!

Q5.

Let 
$$P(x) = 3x^3 - 5x^2 + 3x - 10$$
. Show that

(i) 
$$P(2)=0$$

(ii) (x-2) is a factor of P(x).

(4) (Total for question = 4 marks)



**Q6**.

Use the factor theorem to determine whether g(x) is a factor of p(x),

If  $p(x) = 2x^3 + x^2 - 2x - 1$ , g(x) = x + 1

(4)

(Total for question = 4 marks)

I am Sorry !!!!!

Q7.

Determine which of the polynomials as has (x+1) a factor:

if 
$$x^3 - x^2 - (2 + \sqrt{2})x + \sqrt{2}$$

(5) (Total for question = 5 marks)

(Total for question = 4 marks)

**Q8**.

(b)

$$f(x) = x^3 + 4x^2 + x - 6$$

- (a) use the factor theorem to show that (x+2) is a factor of f(x).
  - (4) Factorize f(x) completely.

$$x^3 + 4x^2 + x - 6 = 0$$

(3)

(2)

(Total for question = 9 marks)



## **DR. ASHAR RANA**



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