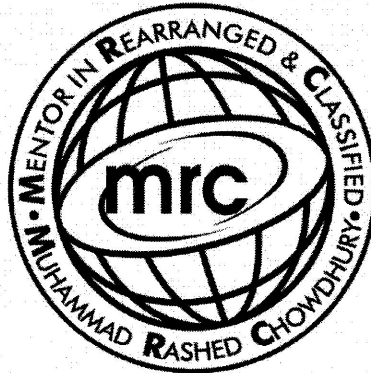


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MATHEMATIC A

TOPIC- Algebraic Manipulation

ALGEBRAIC MANIPULATION-STARTER

Write your answers in the spaces provided.

You must write down all the stages in your working.



1 (a) Factorise $10a + 25$

.....
(1)

(b) Factorise $7w^2 - 4w$

.....
(1)

(c) Expand $p^2(p - 5)$

.....
(2)

(d) Expand and simplify $(x - 3)(x + 7)$

.....
(2)

$G = f^3 - 7f$

(e) Work out the value of G when $f = 2$

$G =$
(2)

(Total for Question 1 is 8 marks)

ALGEBRAIC MANIPULATION-STARTER

2 (a) Factorise $15r + 10$

(1)

(b) Simplify $y^7 \times y^2$

(1)

(c) Expand and simplify $(x + 5)(x - 1)$

(2)

(d) Simplify fully $\frac{36k^3m^4}{30k^5m}$



(2)

ALGEBRAIC MANIPULATION-STARTER

3 (a) Factorise $14x - 35$

(1)

(b) Expand and simplify $3(2c - 5) - 2(c - 4)$



(2)

(c) Simplify $(4e^3)^2$

(2)

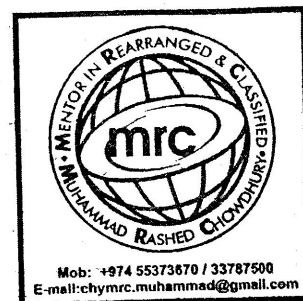
(d) Expand and simplify $(a + 5)(2a - 1)$

(2)

(Total for Question 3 is 7 marks)

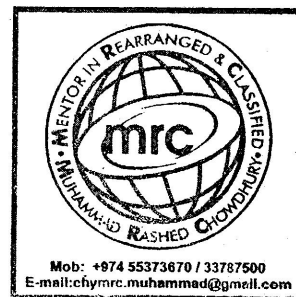
ALGEBRAIC MANIPULATION-STARTER

04 Show that $\frac{3}{8} \div \frac{7}{12} = \frac{9}{14}$



(Total for Question 3 is 2 marks)

Show that $5\frac{2}{3} - 3\frac{4}{5} = 1\frac{13}{15}$



(Total for Question 3 is 3 marks)

ALGEBRAIC MANIPULATION-STARTER

5 (a) Factorise $7h + h^2$

(1)

(b) Expand and simplify $4(p + 5) + 7(p - 2)$

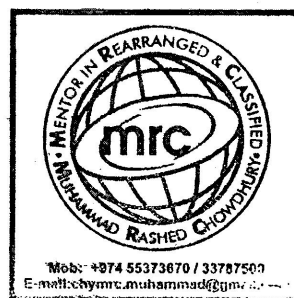
(2)

$$D = 7c^2 + f$$

(c) Work out the value of D when $c = -2$ and $f = 5$

$$D = \dots \dots \dots (2)$$

(d) Solve $5(q - 3) = 12 - q$
Show clear algebraic working.



$$q = \dots \dots \dots (3)$$

(e) Solve the inequality $3 - 7t \geq 31$

(2)

ALGEBRAIC MANIPULATION-STARTER

6 (a) Show that $\frac{3}{10} + \frac{2}{15} = \frac{13}{30}$

(2)

(b) Show that $2\frac{5}{8} \div 1\frac{1}{6} = 2\frac{1}{4}$



(3)

(Total for Question 6 is 5 marks)

ALGEBRAIC MANIPULATION-STARTER

7 (a) Factorise $3y^2 + 2y$

(1)

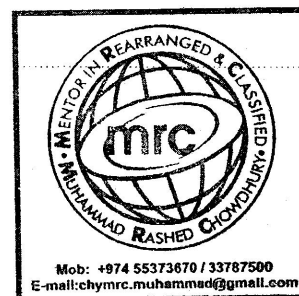
(b) Expand and simplify $(x - 9)(x + 2)$

(2)

(c) (i) Solve $6k + 5 < 20$

(ii) n is an integer and $6n + 5 < 20$.

Write down the largest possible value of n



(3)

(d) Simplify fully $\frac{28x^5y^3}{4xy^2}$

(2)

ALGEBRAIC MANIPULATION-STARTER

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08 Simplify fully $\frac{3}{2x + 12} - \frac{x - 15}{x^2 - 2x - 48}$

5

Show clear algebraic working.

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ALGEBRAIC MANIPULATION-STARTER

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9 (a) Simplify $5y \times 4y^2$



(2)

(b) Simplify $\frac{15e^2f}{25ef^3}$

(2)

(c) Factorise $6p^2 - 5pq - 6q^2$

(2)

(d) Simplify $(x^{-y})^{-z}$

(1)

(Total for Question 9 is 7 marks)

ALGEBRAIC MANIPULATION-STARTER

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10 Simplify $(2x + 3)^2 - (2x + 3)(x - 5)$

Give your answer in the form $ax^2 + bx + c$



(Total for Question 9 is 3 marks)

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