

1. Augustine
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 KEMENTERIA PENDIDIKAN MALAYSIA		 POLITEKNIK MALAYSIA		COURSE CODE/ COURSE NAME		PBM1035 INTENSIVE MATHEMATICS	
				COURSEWORK ASSESSMENT		TUTORIAL 1	
				SESSION		DECEMBER 2018	
				DURATION		CLO1	10 MARKS
JABATAN MATEMATIK, SAINS DAN KOMPUTER				60 MINS		CLO2	
NAME		Augustine				CLO3	
REGISTRATION NO.		051PP18F2025					
PROGRAMME/ SECTION		IPP1		TOTAL MARKS		10 MARKS	

Instructions

- Answer ALL questions. Write your answers in the spaces provided.
- Show your working to get marks. You may use a non-programmable scientific calculator.

Question 1

[2 marks]

CLO1, C1

- (a) Given the expression $3x^2 + 5xy - 10$. Identify the total variable term(s) and constant term(s) in this expression.

[2 marks]

CLO1, C2

- (b) Simplify the expression $3(x + y)^2 - 2x(4y - 5x)$

Question 2

[3 marks]

CLO1, C2

Simplify the polynomial $3x^2(2x^2 + 2x + 1) - (x^4 - 2x^3 - 2x)$.

Question 3

[3 marks]

CLO1, C3

Use polynomial division to simplify the following.

$$\frac{2x^4 + 8x^3 - 5x^2 - 4x + 2}{x^2 + 4x - 2}$$

How many

1) $3x^2 + 5xy - 10$

i) Variable terms = $3x^2 + 5xy$

ii) Constant terms = -10

b) $3(x + y)^2 - 2x(4y - 5x)$

$$= 3(x + y)(x + y) - 2x(4y - 5x)$$

$$= 3(x^2 + xy + xy + y^2) - 8xy + 10x^2$$

$$= 3x^2 + 3xy + 3xy + 3y^2 - 8xy + 10x^2$$

$$= 10x^2 + 3x^2 + 3xy + 3xy - 8xy + 3y^2$$

$$= 13x^2 - 2xy + 3y^2$$

2) $3x^2(2x^2 + 2x + 1) - (x^4 - 2x^3 - 2x)$

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

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

$$= 5x^4 + 8x^3 + 3x^2 + 2x$$

Q3

$$\begin{array}{r} 2x^2 - 1 \\ x^2 + 4x - 2 \overline{) 2x^4 + 8x^3 - 5x^2 - 4x + 2} \\ \underline{- 2x^4 + 8x^3 - 4x^2} \\ -x^2 - 4x + 2 \\ \underline{-x^2 - 4x + 2} \\ 0 \end{array}$$

3

Handwritten notes and scribbles.

$$\begin{array}{r} -x^2 - 4x + 2 \\ \underline{-x^2 - 4x + 2} \\ 0 \end{array}$$

NAME	
REGISTRATION NO.	
PROGRAM/SECTION	
TOTAL MARKS	

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- Question 1
- (a) Given the expression $3x^2 + 2xy - 10$, identify the total variable term(s) and constant term(s) in this expression.
- (b) Simplify the expression $3(x + y)^2 - 2x(4y - 5x)$.

Question 2

Simplify the polynomial $3x^2(2x^2 + 2x + 1) - (x^3 - 2x^2 - 2x)$.

Question 3

Use polynomial division to simplify the following:

$$\frac{2x^2 + 8x^2 - 5x^2 - 4x + 2}{x^2 + 4x - 2}$$

Handwritten calculations for Question 3:

$$\begin{array}{r} 2x^2 + 8x^2 - 5x^2 - 4x + 2 \\ \underline{-(x^2 + 4x - 2)} \\ 2x^2 + 4x^2 - 9x^2 - 4x + 4 \\ \underline{-(2x^2 + 8x^2 - 5x^2 - 4x + 2)} \\ -6x^2 - 4x + 2 \end{array}$$

Handwritten notes and scribbles.