

 KEMENTERIAN PENDIDIKAN TINGGI		 POLITEKNIK MALAYSIA KUCHING SARAWAK		COURSE CODE/ COURSE NAME		DBM2033 DISCRETE MATHEMATICS	
JABATAN MATEMATIK, SAINS DAN KOMPUTER				COURSEWORK ASSESSMENT		QUIZ 1	
				SESSION		DECEMBER 2017	
NAME	Muhammad Nuh Aqid B. Mohammad Yazis			DURATION	20 MINS	CLO1	10 MARKS
REGISTRATION NO.	0500117 F1029					CLO2	
PROGRAMME/ SECTION	DDT2B					CLO3	
						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 (CLO1, C2)

Given set $A = \{x: x \text{ is a non-repetition letter of word } \textit{pineapple}\}$ and set $B = \{y: y \text{ is a vowel letter from word } \textit{pineapple}\}$. Find

- (a) $A - B$
(b) $B - A$

[2 marks]

- (c) $A \cup B$
(d) $A \cap B$

[4 marks]

Question 2 (CLO1, C2)

Given $f(x) = x^2 - 4$ and $g(x) = 2x + 5$, find the value of

- (a) $g \circ f$
(b) $f^{-1}(x)$

[4 marks]

Answer :

1. $A = \{i, n, e, a, l\}$

$B = \{a, e, i\}$

a) $A - B = \{n, l\}$

b) $B - A = \{e\}$

c) $A \cup B = \{a, e, i, n, l\}$

d) $A \cap B = \{a, i\}$

2. $f(x) = x^2 - 4$, $g(x) = 2x + 5$

a) $g \circ f(x) = 2(x^2 - 4) + 5$
 $= 2x^2 - 8 + 5$
 $= 2x^2 - 3$

b) $f^{-1}(x) = f(x)$

$y = x^2 - 4$

$x^2 = y + 4$

$x = \sqrt{y + 4}$

$\therefore f^{-1}(x) = \sqrt{x + 4}$