∩ = and
∪ = combine

KEMENTERIA PENDIDIKAN MALAYSIA — POLITEKNIK MALAYSIA		COURSE CODE/ COURSE NAME		DBM2033 DISCRETE MATHEMATICS
		COURSEWORK ASSESSMENT		QUIZ 1
		SESSION		DECEMBER 2018
JABATAN MATEMATIK, SAINS DAN KOMPUTER		DURATION	15 MINS	CLO1 10 MARKS
NAME	HASRUL SYAFIK BIN HAIRAN			CLO2 8½
REGISTRATION NO.	05DDT18F1055			CLO3
PROGRAMME/ SECTION	DDT 2A	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

CLO2, C2 [5 marks]

If $X = \{a, e, i, o, u\}$ and $Y = \{a, b, c, d, e\}$.
(a) Identify $Y - X$.
(b) Given the universal set $U = \{a, b, c, d, e, f, g, i, o, u, z\}$. What is the complement of $X \cup Y$?
(c) Is set X and Y disjoint sets? Explain your answer.

Question 2

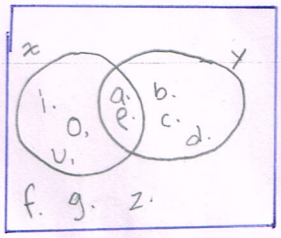
CLO2, C3 [5 marks]

Given function $f(x) = 4x - 1$. The domain for the function is $\{-1, 0, 1\}$.
(a) Identify the range for $f(x)$.
(b) Is the function f one-to-one? Explain your answer.
(c) What is the inverse function for the function above?

Question 1

a) $Y = \{a, b, c, d, e\}$
$X = \{a, e, i, o, u\}$
$Y - X = \{b, c, d\}$ (1)

b)



$x \cup Y = \{i, o, u, a, e, b, c, d\}$ (1)

c) NO, because set X and set Y have a same element. Therefore, it is not disjoint sets. (2)

Question 2

a) $f(x) = 4x - 1$
$= 4(-1) - 1$
$= -5$

$f(x) = 4x - 1$
$= 4(0) - 1$
$= -5$

$f(x) = 4x - 1$
$= 4(1) - 1$
$= 3$ (½)

b) Yes, because each element has their own element. (2)

c) $f(x) = 4x - 1$
Let $y = 4x - 1$
$y = 4x - 1$
$-4x = y + 1$
$x = \frac{y+1}{4}$ (2)

$f^{-1}(x) = \frac{y+1}{4}$
$= \frac{x+1}{4}$ #

KEMENTERIA PENDIDIKAN MALAYSIA

POLITEKNIK MALAYSIA

JABATAN MATEMATIK, SAINS DAN KOMPUTER

NAME	NED DEON BARANTA	COURSE CODE/ COURSE NAME		DBM2033 DISCRETE MATHEMATICS	
REGISTRATION NO.	05DDT17F2018	COURSEWORK ASSESSMENT		QUIZ 1	
PROGRAMME/ SECTION	JTMK DDT 2A	SESSION		DECEMBER 2018	
		DURATION	15 MINS	CLO1	10 MARKS
				CLO2	
				CLO3	
		TOTAL MARKS		10 MARKS	

8/2

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

CLO2, C2 [5 marks]

If $X = \{a, e, i, o, u\}$ and $Y = \{a, b, c, d, e\}$.

(a) Identify $Y - X$.

(b) Given the universal set $U = \{a, b, c, d, e, f, g, i, o, u, z\}$. What is the complement of $X \cup Y$?

(c) Is set X and Y disjoint sets? Explain your answer.

Question 2

CLO2, C3 [5 marks]

Given function $f(x) = 4x - 1$. The domain for the function is $\{-1, 0, 1\}$.

(a) Identify the range for $f(x)$.

(b) Is the function f one-to-one? Explain your answer.

(c) What is the inverse function for the function above?

Question 1

a) $Y = \{a, b, c, d, e\}$ $X = \{a, e, i, o, u\}$

$Y - X = \{b, c, d\}$ (1)

b) $X \cup Y = \{a, b, c, d, e, i, o, u\}$ (1)

$(X \cup Y)' = \{f, g, z\}$ X

c) No, because set X and Y intersect and share elements a and e.

(2)

Question 2

$f(x) = 4x - 1$

domain $= \{-1, 0, 1\}$

a) $f(-1) = 4(-1) - 1$
$= -5$ ✓

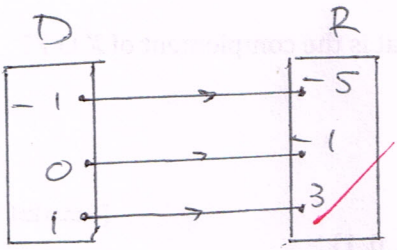
$f(0) = 4(0) - 1$
$= -1$ ✓

$f(1) = 4(1) - 1$
$= 3$ ✓

range $= \{-5, -1, 3\}$ ✓ (1/2)

How?

b)



∴ Yes, because one domain point to only one range. ✓ (2)

c) $f(x)^{-1} = 4x - 1$

let $y = 4x - 1$

$4x = y + 1$

$x = \frac{y+1}{4}$ (2)

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

KEMENTERIA PENDIDIKAN MALAYSIA — POLITEKNIK MALAYSIA JABATAN MATEMATIK, SAINS DAN KOMPUTER		COURSE CODE/ COURSE NAME		DBM2033 DISCRETE MATHEMATICS	
		COURSEWORK ASSESSMENT		QUIZ 1	
		SESSION		DECEMBER 2018	
NAME	muhamad Audi Bin Pasha	DURATION	15 MINS	CLO1	10 MARKS
REGISTRATION NO.	05DDT18F1099			CLO2	
PROGRAMME/ SECTION	DDT2A	TOTAL MARKS		CLO3	10 MARKS

9/10

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

CLO2, C2 [5 marks]

If $X = \{a, e, i, o, u\}$ and $Y = \{a, b, c, d, e\}$.

(a) Identify $Y - X$.

(b) Given the universal set $U = \{a, b, c, d, e, f, g, i, o, u, z\}$. What is the complement of $X \cup Y$?

(c) Is set X and Y disjoint sets? Explain your answer.

Question 2

CLO2, C3 [5 marks]

Given function $f(x) = 4x - 1$. The domain for the function is $\{-1, 0, 1\}$.

(a) Identify the range for $f(x)$.

(b) Is the function f one-to-one? Explain your answer.

(c) What is the inverse function for the function above?

1.(a) $Y = \{a, b, c, d, e\}$

$X = \{a, e, i, o, u\}$

$Y - X = \{b, c, d\}$ ✓ (1)

(b) $X \cup Y = \{a, b, c, d, e, i, o, u\}$ (1)

$(X \cup Y)' = \{f, g, z\}$ ✗

(c) Set X and Set Y are not disjoint sets because they have the same common element which is 'a' and 'e'. (2)

2. (a) Range for $f(x)$

$f(x) = 4x - 1$

Domain $= \{-1, 0, 1\}$

$f(-1) = 4(-1) - 1$
$= -5$

$f(0) = 4(0) - 1$
$= -1$

$f(1) = 4(1) - 1$
$= 3$

(1)

$\therefore$ Range $= \{-5, -1, 3\}$

(2)

(b) It is a one-to-one function because each element has its own unique member. ~~For example, $f(-1) = 4(-) - 1 = -5$ but $f(1) = 4(1) - 1 = 3$.~~

(c) $f(x) = 4x - 1$

$y = 4x - 1$

$-4x = -y - 1$

$4x = y + 1$

$x = \frac{y+1}{4}$

(2)

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

KEMENTERIA PENDIDIKAN MALAYSIA — POLITEKNIK MALAYSIA JABATAN MATEMATIK, SAINS DAN KOMPUTER		COURSE CODE/ COURSE NAME		DBM2033 DISCRETE MATHEMATICS	
		COURSEWORK ASSESSMENT		QUIZ 1	
		SESSION		DECEMBER 2018	
		DURATION	15 MINS	CLO1	10 MARKS
NAME	Ahmed Khalid bin Sufian			CLO2	
REGISTRATION NO.	050071 8F1119			CLO3	
PROGRAMME/ SECTION	DDT2A	TOTAL MARKS		10 MARKS	

6

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

CLO2, C2 [5 marks]

If $X = \{a, e, i, o, u\}$ and $Y = \{a, b, c, d, e\}$.

(a) Identify $Y - X$.

(b) Given the universal set $U = \{a, b, c, d, e, f, g, i, o, u, z\}$. What is the complement of $X \cup Y$?

(c) Is set X and Y disjoint sets? Explain your answer.

Question 2

CLO2, C3 [5 marks]

Given function $f(x) = 4x - 1$. The domain for the function is $\{-1, 0, 1\}$.

(a) Identify the range for $f(x)$.

(b) Is the function f one-to-one? Explain your answer.

(c) What is the inverse function for the function above?

Q1

a) $y - x$ $x = \{a, e, i, o, u\}$ $y = \{a, b, c, d, e\}$

$y - x = \{b, c, d\}$ (1)

b) set $U = \{a, b, c, d, e, f, g, i, o, u, z\}$ ✗

$(x \cup y) = \{f, g, z\}$ ✗

c) set X and y is not disjoint set because since element (a, e) is in the x and y (2)

Q2

a) $f(x) = 4x - 1$

$f(-1) = 4(-1) - 1$

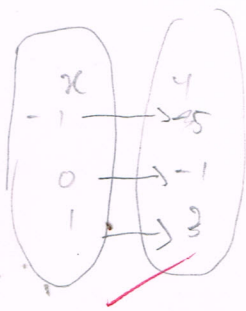
$= -5$

$f(x) = 4(0) - 1$

$= -1$

$f(x) = 4(1) - 1$

$= 3$ (1)



b) yes, because one element in domain is related to joint the range in co domain (2)

c) $f(x) = 4x - 1$

$= 4x - 1$

$\frac{4}{4}$

KEMENTERIAN PENDIDIKAN MALAYSIA — POLITEKNIK MALAYSIA		COURSE CODE/ COURSE NAME	DBM2033 DISCRETE MATHEMATICS	
		COURSEWORK ASSESSMENT	QUIZ 1	
JABATAN MATEMATIK, SAINS DAN KOMPUTER		SESSION	DECEMBER 2018	
NAME	SYAHIRAH BINTI YAMAN	DURATION 15 MINS	CLO1	10 MARKS
REGISTRATION NO.	05DDT18F1073		CLO2	6
			CLO3	
PROGRAMME/ SECTION	DDT2A-S1	TOTAL MARKS		10 MARKS

Instructions

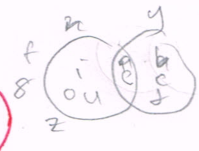
- Answer ALL questions. Write your answers in the spaces provided.
- Show your working to get marks. You may use a non-programmable scientific calculator.

Question 1

CLO2, C2 [5 marks]

If $X = \{a, e, i, o, u\}$ and $Y = \{a, b, c, d, e\}$.

(a) Identify $Y - X$. = {b, c, d} ✓ (1)



(b) Given the universal set $U = \{a, b, c, d, e, f, g, i, o, u, z\}$. What is the complement of $X \cup Y$?

(c) Is set X and Y disjoint sets? Explain your answer.

Not a disjoint sets because this a disjoint are means there both are no elements in the both common set. But, x & y have the common element which is x ∩ y = {a, e}

(x ∪ y)' = {f g z}

Question 2

CLO2, C3 [5 marks]

Given function $f(x) = 4x - 1$. The domain for the function is $\{-1, 0, 1\}$.

(a) Identify the range for $f(x)$.

(b) Is the function f one-to-one? Explain your answer.

(c) What is the inverse function for the function above?

f(x) = 4x − 1

4(−1) − 1 = −5

(0) = −1

(1) = 3

−1, 0, 1 → −5, −1, 3 — range

f(x) = 4x − 1

4(−1) − 1

= −5

Question 1

$X = \{a, e, i, o, u\}$, $Y = \{a, b, c, d, e\}$

(a) $Y - X = \{b, c, d\}$ ✓

$U = \{a, b, c, d, e, f, g, i, o, u, z\}$

(b) $(X \cup Y)' = \{f, g, z\}$ ✗

(c) Set X and Y are not a disjoint sets because both of the sets ~~share some~~ have ~~the~~ common elements, which is $X \cap Y = \{a, e\}$.
A ~~dis~~ disjoint sets means both of the sets doesn't have a common element at all.

(2)

Question 2

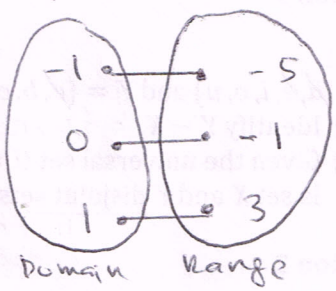
$f(x) = 4x - 1$, $\text{Dom}(R) = \{-1, 0, 1\}$

(a) $f(x) = 4(-1) - 1$
$= -5$
$f(x) = 4(0) - 1$
$= 3 - 1$
$f(x) = 4(1) - 1$
$= 3$

(1)

So, Range $(R) = \{-5, -1, 3\}$

$f(x) = 4x - 1$



(b) The function f is one to one because ~~there~~ each element in domain related to each element in ~~range~~ codomain.

(2)

(c) $f(x) = 4x - 1$

~~f~~ if $x = -1$,
$f(x) = 4(-1) - 1$
$= -5$ ✱

if $x = 0$,
$f(x) = 4(0) - 1$
$= -1$ ✱

if $x = 1$,
$f(x) = 4(1) - 1$
$= 3$ ✱

2.

KEMENTERIA PENDIDIKAN MALAYSIA / POLITEKNIK MALAYSIA JABATAN MATEMATIK, SAINS DAN KOMPUTER		COURSE CODE/ COURSE NAME		DBM2033 DISCRETE MATHEMATICS	
		COURSEWORK ASSESSMENT		QUIZ 1	
		SESSION		DECEMBER 2018	
		DURATION	15 MINS	CLO1	10 MARKS
NAME	FRANCISCCA ANAK UBIN			CLO2	7½
REGISTRATION NO.	05DDT18F1020			CLO3	
PROGRAMME/ SECTION	DDT2A	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

CLO2, C2 [5 marks]

If $X = \{a, e, i, o, u\}$ and $Y = \{a, b, c, d, e\}$.

(a) Identify $Y - X$.

(b) Given the universal set $U = \{a, b, c, d, e, f, g, i, o, u, z\}$. What is the complement of $X \cup Y$?

(c) Is set X and Y disjoint sets? Explain your answer.

Question 2

CLO2, C3 [5 marks]

Given function $f(x) = 4x - 1$. The domain for the function is $\{-1, 0, 1\}$.

(a) Identify the range for $f(x)$.

(b) Is the function f one-to-one? Explain your answer.

(c) What is the inverse function for the function above?

question 1

(a) $x = 5$ $y = 5$ $5 \times 5 = 25$

{(a,a),(a,e),(a,i),(a,o),(a,u),(b,a),(b,e),(b,i),(b,o),(b,u),
(c,a),(c,e),(c,i),(c,o),(c,u),(d,a),(d,e),(d,i),(d,o),(d,u),
(e,a),(e,e),(e,i),(e,o),(e,u),(,)}

(b) $X = \{a, e, i, o, u\}$

$Y = \{a, b, c, d, e\}$

$X \cup Y = \{a, e, i, o, u, b, c, d\}$ ✓ (1) so?

(c) $X = \{a, e, i, o, u\}$

$Y = \{a, b, c, d, e\}$ ✓ (2)

- set X and Y not disjoint sets. since some of elements

Question 2

(a) $f(x) = 4x - 1$

domain $= \{-1, 0, 1\}$

① $f(x) = 4(-1) - 1$
$= -5$

② $4(0) - 1$
$= 0$

③ $4(1) - 1$
$= 3$

Range : $\{-5, 0, 3\}$ $\frac{1}{2}$

(b)

- Yes. Because each elements in domain pointing to each elements in the range. 2

(c)

$f(x) = 4x - 1$

$y = 4x - 1$

$1 + y = 4x$

$\frac{1+y}{4} = x$ 2

$y = \frac{1+x}{4}$

① $y = \frac{1 + (-1)}{4}$
$= 0$

② $y = \frac{1 + (0)}{4}$
$= 1/4$

③ $y = \frac{1 + 1}{4}$
$y = 1/2$

KEMENTERIA PENDIDIKAN MALAYSIA / POLITEKNIK MALAYSIA		COURSE CODE/ COURSE NAME		DBM2033 DISCRETE MATHEMATICS	
		COURSEWORK ASSESSMENT		QUIZ 1	
		SESSION		DECEMBER 2018	
JABATAN MATEMATIK, SAINS DAN KOMPUTER		DURATION	15 MINS	CLO1	10 MARKS
NAME	Marcello ak Miga			CLO2	3
REGISTRATION NO.	DSDDT18F1006			CLO3	
PROGRAMME/ SECTION	DDT 2A	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

CLO2, C2 [5 marks]

If $X = \{a, e, i, o, u\}$ and $Y = \{a, b, c, d, e\}$.

(a) Identify $Y - X$.

(b) Given the universal set $U = \{a, b, c, d, e, f, g, i, o, u, z\}$. What is the complement of $X \cup Y$?

(c) Is set X and Y disjoint sets? Explain your answer.

Question 2

CLO2, C3 [5 marks]

Given function $f(x) = 4x - 1$. The domain for the function is $\{-1, 0, 1\}$.

(a) Identify the range for $f(x)$.

(b) Is the function f one-to-one? Explain your answer.

(c) What is the inverse function for the function above?

Question 1

(a) $X = \{a, e, i, o, u\}$, $Y = \{a, b, c, d, e\}$

$Y - X = \{b, c, d\}$ (1)

(b) ~~$X \cup Y = \{(a,a), (a,b), (a,c), (a,d), (a,e), (~~ $X \cup Y = \{a, b, c, d, e, i, o, u$

$U = \{a, b, c, d, e, f, g, i, o, u, z\}$ ✗ complement = $\{f, z\}$ ✗

(c) X and Y is disjoint set. Not all $X \cup Y \notin U$

$U = \{a, b, c, d, e, f, g, i, o, u, z\}$

disjoint = $\{f, z\}$

Question 2

a) $f(x) = 4x - 1$, $x = \{-1\}$

$f(-1) = 4x - 1$

$= 4(-1) - 1$

$= -4 - 1$

$= -5$ ✓ (1)

b) ~~it is one to one since domain = $\{-1, 0, 1\}$~~

$f(x) = 4x - 1$, $x = \{0\}$

$f(0) = 4x - 1$

$= 4(0) - 1$

$= 0 - 1$

$= -1$ ✓

c) $f(x) = 4x -$

$x = \{1\}$

$f(1) = 4x - 1$

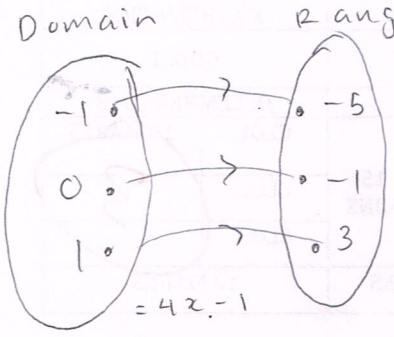
$= 4(1) - 1$

$= 4 - 1$

$= 3$

Question 2

b) the function is one to ~~one~~



= all domain are connected to ~~the range~~ one of the range.

c) Inverse

$f(x) = 4x - y$

$y = 4x - x$

$= \frac{x-y}{4}$

$f(x) = 4x - 1$

$= y + 1$

$y + 1 = \frac{x}{4}$

$y = \frac{x-1}{4}$

$f^{-1}(x) = \frac{x-1}{4}$

inverse : ~~4x-1~~ ~~4x-1~~

$x = 4x - 1, y = \frac{x-1}{4}$

KEMENTERIA PENDIDIKAN MALAYSIA — POLITEKNIK MALAYSIA		COURSE CODE/ COURSE NAME		DBM2033 DISCRETE MATHEMATICS	
		COURSEWORK ASSESSMENT		QUIZ 1	
		SESSION		DECEMBER 2018	
JABATAN MATEMATIK, SAINS DAN KOMPUTER		DURATION	15 MINS	CLO1	10 MARKS
NAME	Freedy Fooster ak Basil			CLO2	
REGISTRATION NO.	05DDT18F1125			CLO3	
PROGRAMME/ SECTION	DDT2A	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

CLO2, C2 [5 marks]

If $X = \{a, e, i, o, u\}$ and $Y = \{a, b, c, d, e\}$.

(a) Identify $Y - X$.

(b) Given the universal set $U = \{a, b, c, d, e, f, g, i, o, u, z\}$. What is the complement of $X \cup Y$?

(c) Is set X and Y disjoint sets? Explain your answer.

Question 2

CLO2, C3 [5 marks]

Given function $f(x) = 4x - 1$. The domain for the function is $\{-1, 0, 1\}$.

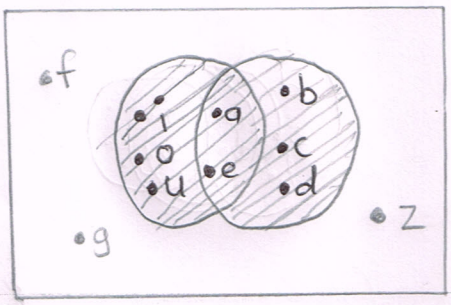
(a) Identify the range for $f(x)$.

(b) Is the function f one-to-one? Explain your answer.

(c) What is the inverse function for the function above?

Question 1(A)

b.)



$X = \{a, e, i, o, u\}$

$Y = \{a, b, c, d, e\}$

$X \cup Y = \{a, b, c, d, e, i, o, u\}$

c.) Set X and Set Y is a joint set. Because set X and set Y have same elements.

Question 2(A)

Info:

$f(x) = 4x - 1$

Domain $= \{-1, 0, 1\}$

a) Answer

Domain $= \{-1, 0, 1\}$

if $x = -1$

$f(x) = 4(-1) - 1$

$= -4 - 1$

first range $= -5$

if $x = 0$

$f(x) = 4(0) - 1$

second range $= -1$

if $x = 1$

$f(x) = 4(1) - 1$

$= 4 - 1$

third range $= 3$ (1)

∴ the answer for range $= \{-5, -1, 3\}$ #

b) Info: d: $\{-1, 0, 1\}$ → $\{-5, -1, 3\}$: r

= The function of f is not ~~one~~-to-one.

c) $f(x) = 4x - 1$

$y = 4x - 1$

$y + 1 = 4x$

$4x = y + 1$

$x = \frac{y+1}{4}$ (2)

KEMENTERIA PENDIDIKAN MALAYSIA / POLITEKNIK MALAYSIA		COURSE CODE/ COURSE NAME		DBM2033 DISCRETE MATHEMATICS	
		COURSEWORK ASSESSMENT		QUIZ 1	
		SESSION		DECEMBER 2018	
JABATAN MATEMATIK, SAINS DAN KOMPUTER		DURATION	15 MINS	CLO1	10 MARKS
				CLO2	
				CLO3	
NAME	Muhd Hafiz Hazig	TOTAL MARKS		10 MARKS	
REGISTRATION NO.	05DDT18F1140				
PROGRAMME/ SECTION	DDT2A				

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

CLO2, C2 [5 marks]

If $X = \{a, e, i, o, u\}$ and $Y = \{a, b, c, d, e\}$.

(a) Identify $Y - X$.

(b) Given the universal set $U = \{a, b, c, d, e, f, g, i, o, u, z\}$. What is the complement of $X \cup Y$?

(c) Is set X and Y disjoint sets? Explain your answer.

Question 2

CLO2, C3 [5 marks]

Given function $f(x) = 4x - 1$. The domain for the function is $\{-1, 0, 1\}$.

(a) Identify the range for $f(x)$.

(b) Is the function f one-to-one? Explain your answer.

(c) What is the inverse function for the function above?

Question 1

a) $\{a, e, i, o, u\}$ $\{a, b, c, d, e\}$

$= \{i, o, u\}$ $\{b, c, d\}$

b) $u = \{a, b, c, d, e, f, g, i, o, u, z\}$

$X \cup Y = \{a, e, i, o, u, a, b, c, d, e\}$

complement of $X \cup Y = \{f, g, z\}$

$\overline{X \cup Y}$

$X \cup Y$

c) Yes

f^{-1}

Question 2

a) $f(x) = 4(-1) - 1$ $f(x) = 4(0) - 1$ $f(x) = 4(1) - 1$

$= -4 - 1$ $= 0 - 1$ $= 4 - 1$

$= -5$ $= -1$ $= 3$

Range $= \{-5, -1, 3\}$

b)

-1	-5
0	-1
1	3

- No. Because some domain are not connected to the codomain

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