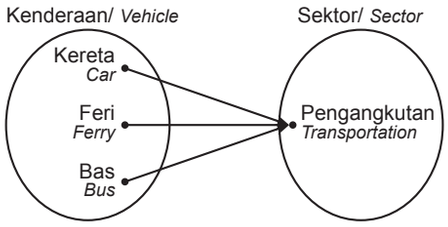
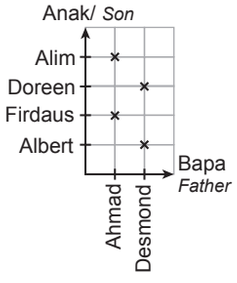
Jawapan

Bab 8

1. Rajah anak panah / *Arrow diagram*



Graf / *Graph*



Pasangan tertib / *Ordered pair*

{(Tepung, Minah), (Tepung, Joyce), (Gula, Minah), (Minyak, Minah), (Minyak, Joyce)}
{(*Flour, Minah*), (*Flour, Joyce*), (*Sugar, Minah*), (*Oil, Minah*), (*Oil, Joyce*)}

2. (a) **Jenis hubungan / fungsi**
Types of relation / function

Fungsi satu kepada satu
One-to-one function

Justifikasi / *Justification*

Setiap nilai x hanya mempunyai satu nilai y yang sepadan.
Each value of x has only one corresponding value of y.

(b) **Jenis hubungan / fungsi**
Types of relation / function

Hubungan satu kepada banyak
One-to-many relation

Justifikasi / *Justification*

Terdapat nilai S yang mempunyai dua atau lebih nilai T yang sepadan.
There are values of S which have two or more corresponding value of T.

(c) **Jenis hubungan / fungsi**
Types of relation / function

Fungsi banyak kepada satu
Many-to-one function

Justifikasi / *Justification*

Setiap nilai x hanya mempunyai satu nilai y yang sepadan. Apabila $x = 1$, $x = 3$ dan $x = 5$, $y = 2$ dan apabila $x = 2$ dan 4, $y = 4$.
Each value of x has only one corresponding value of y. When x = 1, x = 3 and x = 5, y = 2 and when x = 2 and 4, y = 4.

(d) **Jenis hubungan / fungsi**
Types of relation / function

Hubungan banyak kepada banyak
Many-to-many relation

Justifikasi / *Justification*

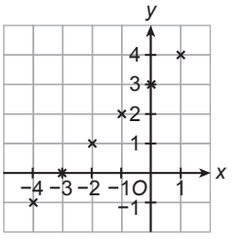
Terdapat nilai x yang mempunyai dua atau lebih nilai y yang sepadan. Terdapat juga nilai y yang mempunyai dua atau lebih nilai x yang sepadan.
There are values of x which have two or more corresponding values of y. There also values of y which have two or more corresponding values of x.

3. (a) Domain / *Domain* = {−2, −1, 0, 1, 2}
Kodomain / *Codomain* = {−8, −1, 0, 1, 8}
Objek / *Object* = −2, −1, 0, 1, 2
Imej / *Image* = −8, −1, 0, 1, 8
Julat / *Range* = {−8, −1, 0, 1, 8}

(b) Domain / *Domain* = {*k*, *l*, *p*, *q*}
Kodomain / *Codomain* = {2, 3, 4, 5, 6, 7}
Objek / *Object* = *k*, *l* , *p*, *q*
Imej / *Image* = 2, 3, 5, 6
Julat / *Range* = {2, 3, 5, 6}

4. (a) (i) {(−4, −1), (−3, 0), (−2, 1), (−1, 2), (0, 3), (1, 4)}

(ii)



(iii)

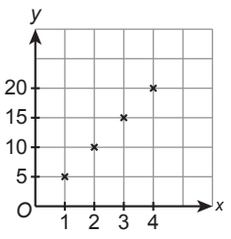
R	−4	−3	−2	−1	0	1
S	−1	0	1	2	3	4

(iv) $-1 = -4 + 3$
$0 = -3 + 3$
$1 = -2 + 3$

$2 = -1 + 3$
$3 = 0 + 3$
$4 = 1 + 3$
$\therefore y = x + 3$ atau/ *or* $f(x) = x + 3$

(b) (i) {(1, 5), (2, 10), (3, 15), (4, 20)}

(ii)



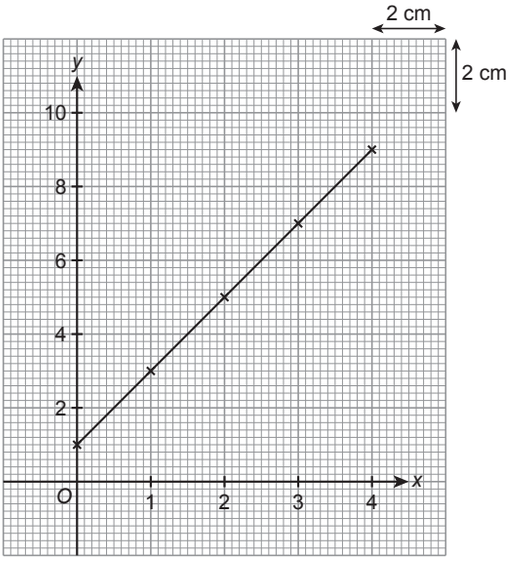
(iii)

U	1	2	3	4
V	5	10	15	20

(iv) $5 = 1(5)$
$10 = 2(5)$
$15 = 3(5)$
$20 = 4(5)$
$\therefore y = 5x$ atau/ *or* $f(x) = 5x$

5. (a)

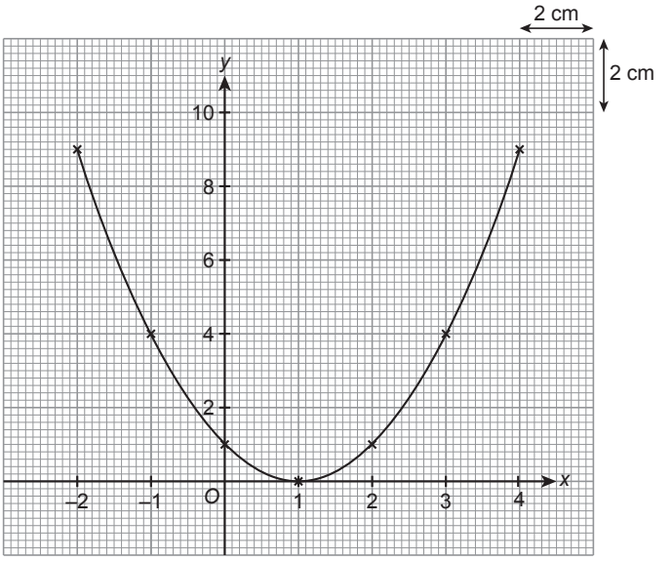
x	0	1	2	3	4
y	1	3	5	7	9



$x = 0, y = 2(0) + 1 = 1$
$x = 1, y = 2(1) + 1 = 3$
$x = 2, y = 2(2) + 1 = 5$
$x = 3, y = 2(3) + 1 = 7$
$x = 4, y = 2(4) + 1 = 9$

(b)

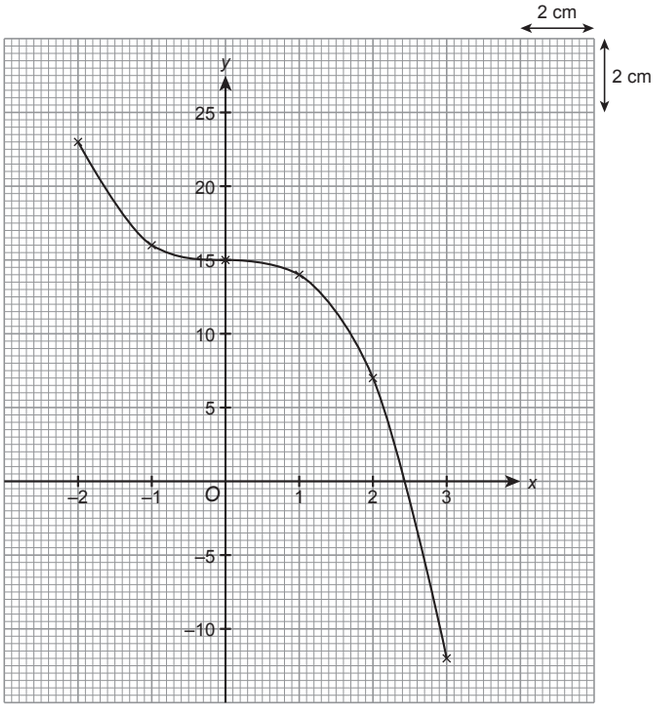
x	−2	−1	0	1	2	3	4
y	9	4	1	0	1	4	9



$x = -2, y = (-2)^2 - 2(-2) + 1 = 9$
$x = -1, y = (-1)^2 - 2(-1) + 1 = 4$
$x = 0, y = 0^2 - 2(0) + 1 = 1$
$x = 1, y = 1^2 - 2(1) + 1 = 0$
$x = 2, y = 2^2 - 2(2) + 1 = 1$
$x = 3, y = 3^2 - 2(3) + 1 = 4$
$x = 4, y = 4^2 - 2(4) + 1 = 9$

(c)

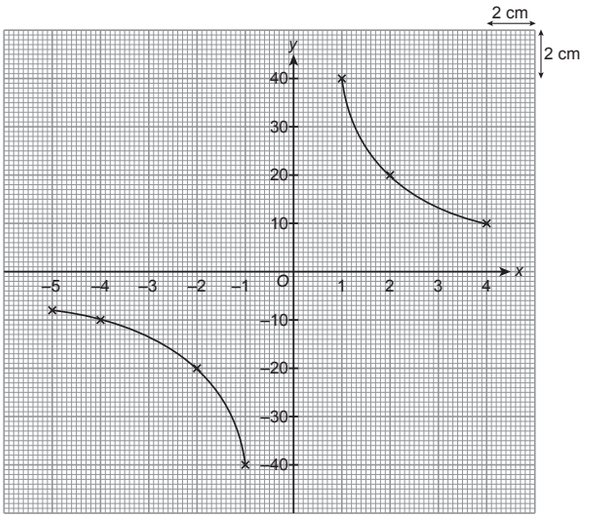
x	−2	−1	0	1	2	3
y	23	16	15	14	7	−12



$x = -2, y = 15 - (-2)^3 = 23$
$x = -1, y = 15 - (-1)^3 = 16$
$x = 0, y = 15 - (0)^3 = 15$
$x = 1, y = 15 - (1)^3 = 14$
$x = 2, y = 15 - (2)^3 = 7$
$x = 3, y = 15 - (3)^3 = -12$

(d)

x	−5	−4	−2	−1	1	2	4
y	−8	−10	−20	−40	40	20	10



$x = -5, y = \frac{40}{-5} = -8$

$x = -4, y = \frac{40}{-4} = -10$

$x = -2, y = \frac{40}{-2} = -20$

$x = -1, y = \frac{40}{-1} = -40$

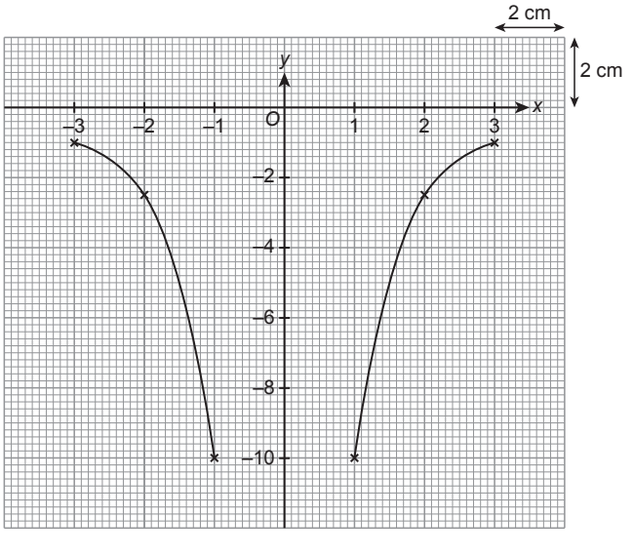
$x = 1, y = \frac{40}{1} = 40$

$x = 2, y = \frac{40}{2} = 20$

$x = 4, y = \frac{40}{4} = 10$

(e)

x	−3	−2	−1	1	2	3
y	−1.1	−2.5	−10	−10	−2.5	−1.1



$x = -3, y = \frac{-10}{(-3)^2} = -1.1$

$x = -2, y = \frac{-10}{(-2)^2} = -2.5$

$x = -1, y = \frac{-10}{(-1)^2} = -10$

$x = 1, y = \frac{-10}{1^2} = -10$

$x = 2, y = \frac{-10}{2^2} = -2.5$

$x = 3, y = \frac{-10}{3^2} = -1.1$

6. (a) $y = 4.4$

(b) $y = 14$

(c) $x = -2.5$ dan/*and* 2.5

(d) $x = -3.7$ dan/*and* 3.7

7. (a) (i) Daripada graf itu, apabila
From the graph, when
$L = 60$ cm^2, $x = 3.2$ cm

(ii) Apabila $x = 3.8$, $L = 86$ cm^2
When $x = 3.8$, $L = 86$ cm^2

(b) (i) Isi padu asal / *Initial volume* = 140 ℓ

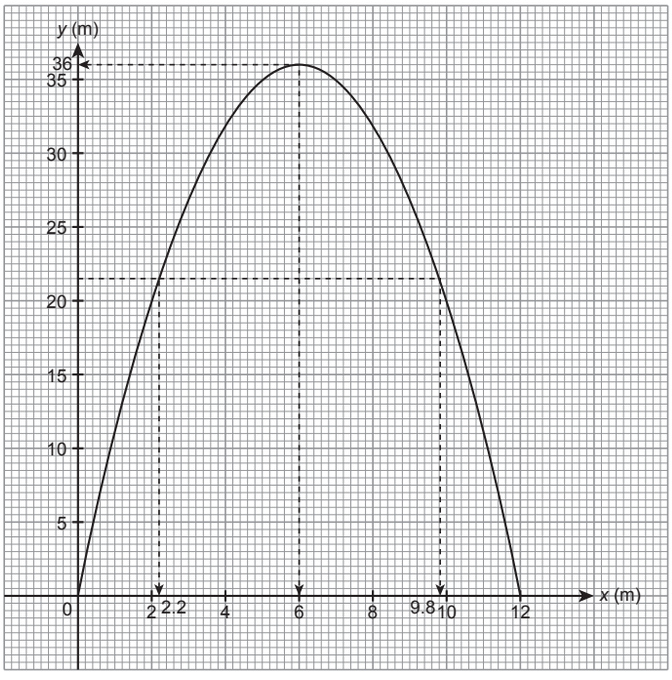
Isi padu air dalam tangki selepas mengeluarkan 10 ℓ air
Volume of water in the tank after removing 10 ℓ *of water*
= 140 − 10
= 130 ℓ

Apabila/ *When* $V = 130$, $t = 0.9$

Masa yang diperlukan/ *Time needed*
= 0.9 × 60
= 54 saat/ *seconds*

(ii) Apabila $t = 4$ minit, $V = 100$ ℓ
When $t = 4$ *minutes*, $V = 100$ ℓ

8. (a)



(i) Apabila $y = 21.5$, $x = 2.2$ dan 9.8
When $y = 21.5$, $x = 2.2$ *and* 9.8

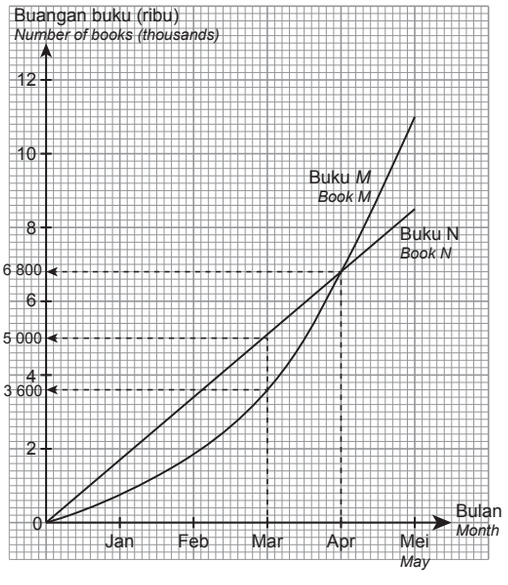
Beza jarak di antara dua tiang
The difference of the distance between the two pillars
$= 9.8 - 2.2 = 7.6$ m

(ii) Daripada graf itu, tinggi maksimum = 36 m apabila $x = 6$ m.
Maka, jarak mengufuk dari sebelah kiri pintu gerbang = 6 m.
From the graph, maximum height = 36 m *when* $x = 6$ m.
Thus, the horizontal distance from the left of the archway = 6 m.

(iii) Tinggi pintu gerbang itu bertambah dan mencapai maksimum apabila jarak mengufuk dari sebelah kiri pintu gerbang itu ialah 6 m. Selepas 6 m dari sebelah kiri pintu gerbang itu, tinggi pintu gerbang itu semakin berkurangan.
The height of the archway increases and reaches its maximum when horizontal distance from the left of the archway is 6 m.
After 6 m *from the left of the archway, the height of the archway decreases.*

(b) (i) 11 a.m.
(ii) 1:00 p.m., kerana waktu makan tengah hari.
1:00 p.m., *because lunch time*

(c)



(i) Berdasarkan graf, bilangan jualan bagi buku *M* ialah 3 600 manakala, buku *N* ialah 5 000.
Based on the graph, the number of sales of book M is 3 600 *whereas book N is* 5 000.

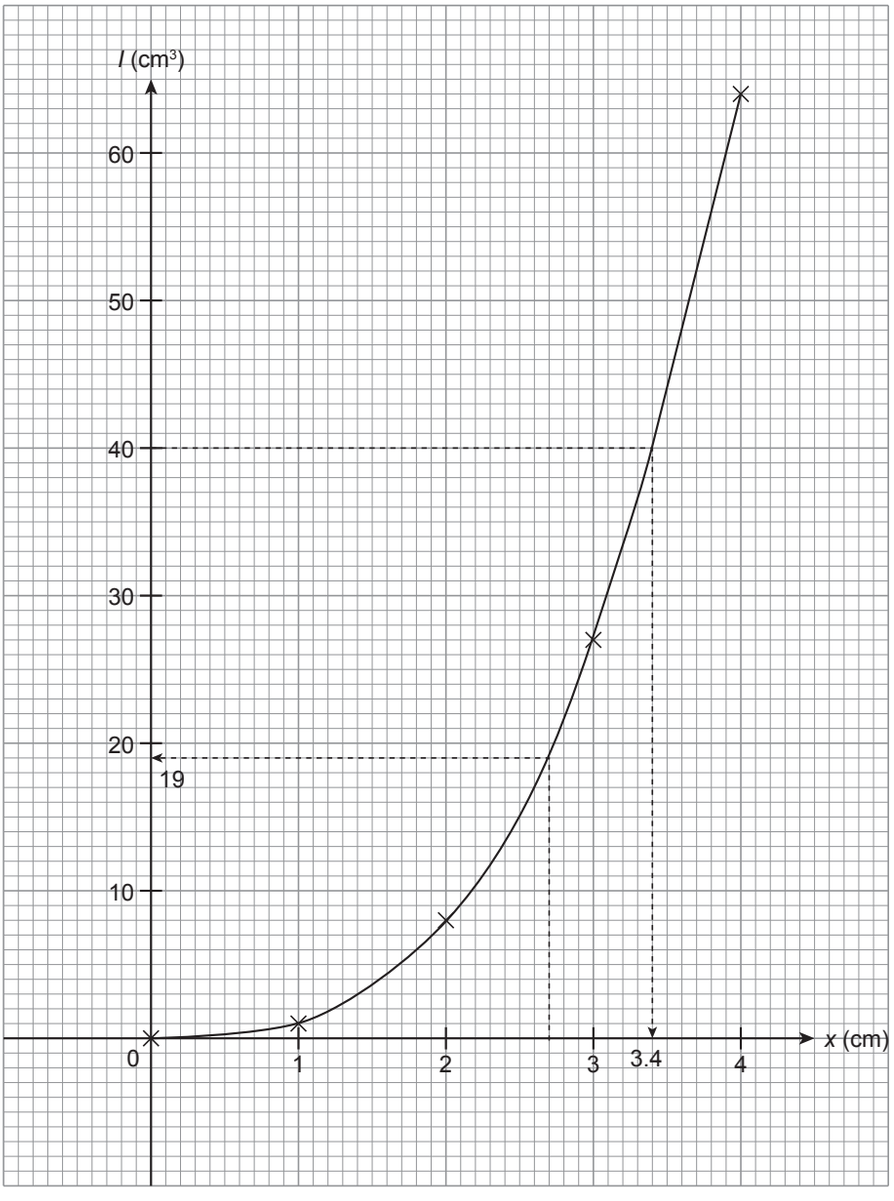
(ii) Kedua-dua graf bersilang pada bulan April. Maka, bilangan buku yang dijual bagi kedua-dua jenis buku adalah sama pada bulan April sebanyak 6 800 buah buku.
Both graphs intersect in April. Thus, the number of books sold for both books are the same in April for 6 800 *books.*

(iii) Buku *N* kerana jualan buku tersebut selepas 5 bulan adalah rendah daripada buku *M*.
Book N because the sales of the book after 5 *months are still lower than book M.*

(d) (i) $I = x^3$

(ii)

x	0	1	2	3	4
I	0	1	8	27	64



(iii) (a) Apabila / *When* $x = 2.7$ cm, $I = 19$ cm^3
(b) Apabila / *When* $I = 40$ cm^3, $x = 3.4$ cm

Praktis Masteri 8

BAHAGIAN A

1. Jawapan / *Answer*: **C**

2. Jawapan / *Answer*: **C**

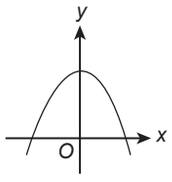
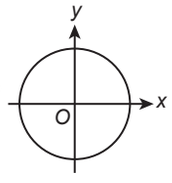
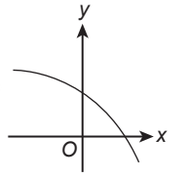
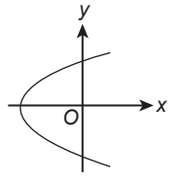
3. $y = 2x - 9$
$= 2(-2) - 9$
$= -13$

Jawapan / *Answer*: **D**

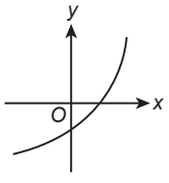
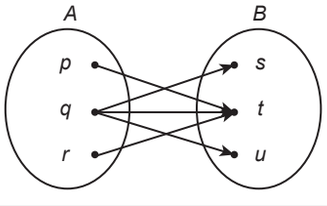
4. Jawapan / *Answer*: **C**

BAHAGIAN B

5.

Hubungan satu kepada banyak *One-to-many relation*	
Hubungan satu kepada satu *One-to-one relation*	
Hubungan banyak kepada satu *Many-to-one-relation*	
Hubungan banyak kepada banyak *Many-to-many relation*	

6.

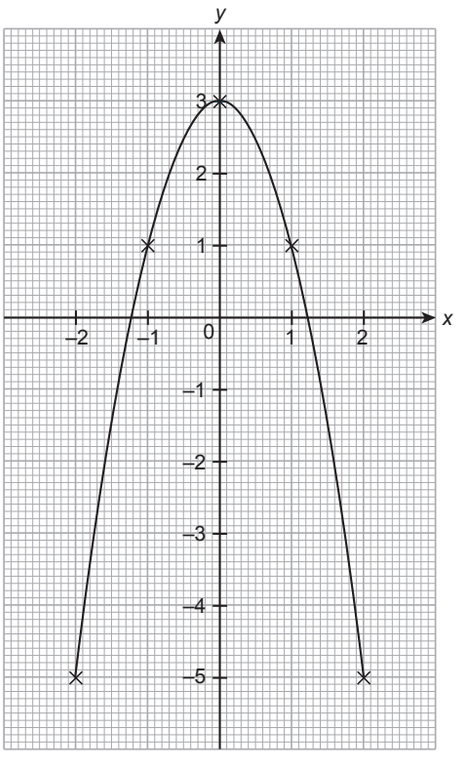
{(2, 1), (7, 1), (8, 3), (9, 3)}	✓
	✓
	✗
$y = 2 - 3x$	✓

BAHAGIAN C

7. (a) (i) $y = 3 - 2x^2$

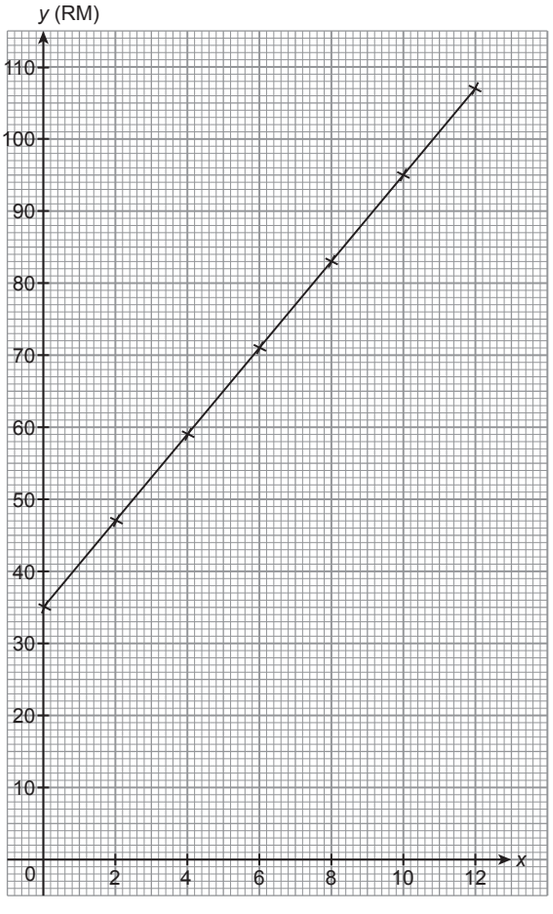
$p = 3 - 2(-2)^2$

$= -5$

(ii) 

(b) (i)

x	2	4	6	8	10	12
y	47	59	71	83	95	107

(ii) 

(iii) Ya. Dia masih menerima gaji sebanyak RM35.

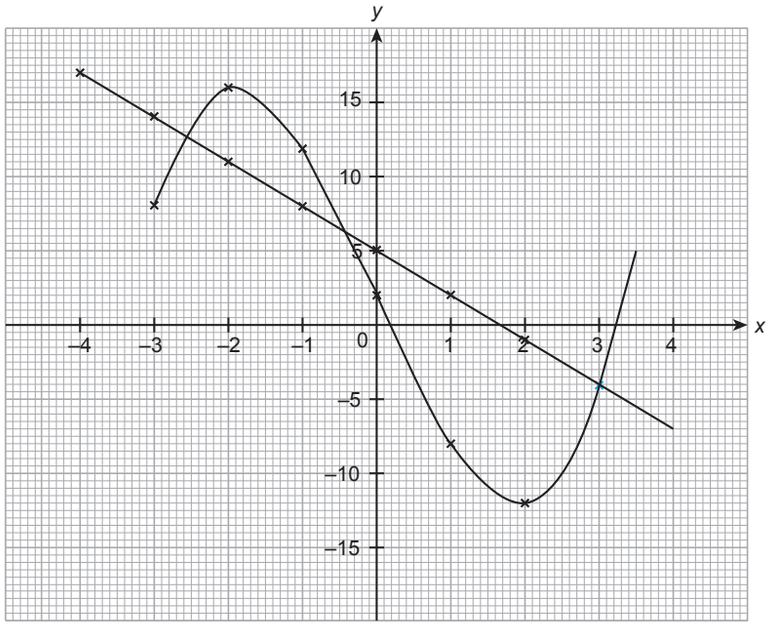
Yes. He still receive his pay of RM35.

Fokus KBAT

(a)

x	–3	–2	–1	0	1	2	3
y	8	16	12	2	–8	–12	–4

(b)



(c) $y = 5$

(d) (–2.55, 12.75), (–0.45, 6.25) dan / *and* (3, –4)