

FORM 2

CHAPTER 8

Summative Practice

Section A

1 When $x=0, y=3 \rightarrow$ possibilities are **A** or **B**

$$\begin{aligned} \text{When } x=2, \quad y &= x^3 + 3 \\ &= 8 + 3 \\ &= 11 \neq 9 \end{aligned}$$

$$\begin{aligned} \text{When } x=2, \quad y &= 3x + 3 \\ &= 6 + 3 \\ &= 9 \end{aligned}$$

Answer: **B**

2 $f(x) = 6(x-1) = x$

$$\begin{aligned} 6x - 6 &= x \\ 5x &= 6 \end{aligned}$$

$$\begin{aligned} x &= \frac{6}{5} \\ &= 1\frac{1}{5} \end{aligned}$$

Answer: **A**

3 $y = 4x^3 + 27$

$$\begin{aligned} (p, -5); x=p, y=-5 \\ -5 &= 4p^3 + 27 \end{aligned}$$

$$4p^3 = -32$$

$$p^3 = -8$$

$$p = -2$$

Answer: **A**

4 Gradient has a negative value.

y-intercept = 120

Possibilities are **B, C** or **D**

$$\text{Gradient, } m = \frac{-120}{10}$$

$$= -12$$

$$\therefore y = 120 - 12x$$

Answer: **D**

5 A function is a one-to-one relation and many-to-one relation.

A: One-to-many relation

B: One-to-many relation

C: One-to-one relation

D: Many-to-many relation

Answer: **C**

6 There are two objects -3 and 0 mapped to the same image.

There is one object 0 mapped to three different images that are $2, 3$ and -1 .

Relation: Many-to-many

Answer: **B**

7 Relations for function: one-to-one and many-to-one

Each object must have an image.

Answer: **A**

8 Graph **C** is not a function because an object, x can have 2 images.

Answer: **C**

9 Answer: **B**

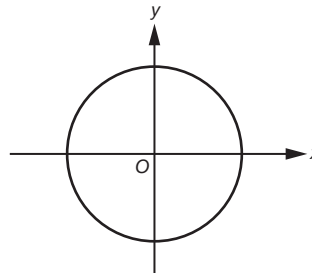
10 Answer: **C**

Section B

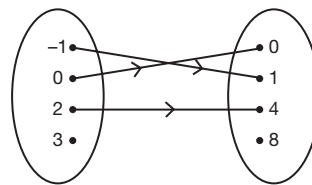
1 (a)

x	-2	-1	0	1	2	3
$f(x)$	-22	-10	-4	2	14	38

2 (a)

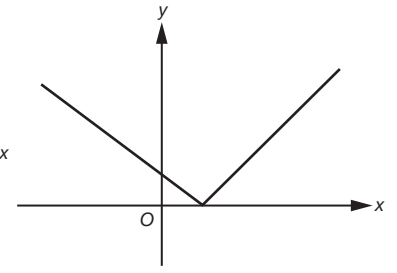


(c)

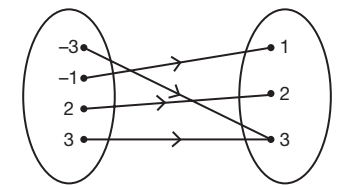


X

(b)



(d)



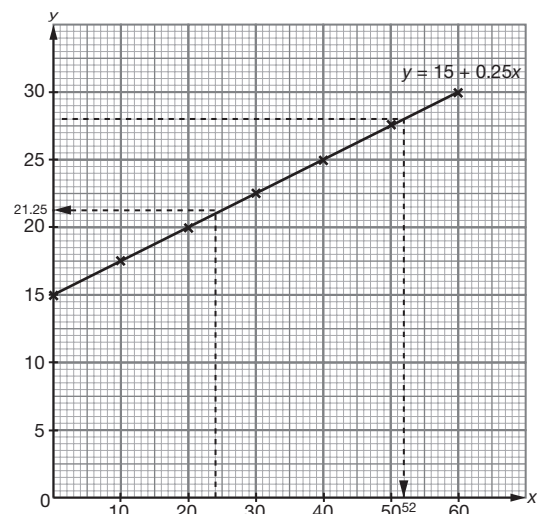
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Section C

1 (a) (i) $y = 15 + 0.25x$, y = monthly cost, x = number of hours

(ii)

0	10	20	30	40	50	60
15	17.5	20	22.5	25	27.5	30



(iii) (a) RM21.25

(b) 52 hours

$$(b) \quad y = \frac{\sqrt[3]{x}}{2} - 1$$

When $(-64, k)$

$$k = \frac{\sqrt[3]{-64}}{2} - 1$$

$$k = \frac{-4}{2} - 1 = -3$$

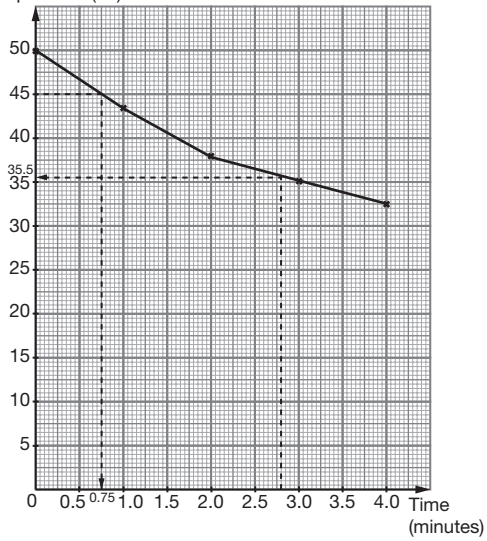
(c) $s = 15 + 0.01d$

Dependent variable = s , temperature of the soil

Independent variable = d , depth of the soil

- 2 (a) (i) Dependent variable = temperature
Independent variable = time

- (ii) Temperature ($^{\circ}\text{C}$)



(iii) (a) 35.5°C

(b) 0.75 minutes

- (b) Total cost = mass of squids (price of squids per kg) + mass of prawns (price of prawns per kg)

Let the price per kg of squids = y and price per kg of prawns = x ,

$$(3 \text{ kg})y + (1 \text{ kg})x = 18$$

$$3y + x = 18$$

$$3y = -x + 18$$

$$y = -\frac{x}{3} + 6$$

When $y = 4$

$$-\frac{x}{3} + 6 = 4$$

$$-\frac{x}{3} = -2$$

$$x = 6$$

$$\therefore x = \text{RM}6$$