# Jawapan

## Bab 1

**1.** (a) Pola: Menambah dua segi empat tepat kepada corak sebelumnya.
*Pattern: Adding two rectangles to the previous pattern.*

(b) Pola: Menolak satu baris bermula dari bawah daripada corak sebelumnya.
*Pattern: Subtracting a row starting from the bottom of the previous pattern.*

**2.** (a) 23, 24, 27, 32, 39, ...
+1 +3 +5 +7
Menambah nombor ganjil bermula dengan 1 kepada nombor sebelumnya.
*Add odd numbers starting with 1 to the previous number.*

(b) 75 000, 15 000, 3 000, 600, 120, ...
÷5 ÷5 ÷5 ÷5
Membahagi nombor sebelumnya dengan 5.
*Divide the previous number by 5.*

(c) 1.5, 0.3, 0.06, 0.012, 0.0024, ...
× 0.2 × 0.2 × 0.2 × 0.2
Mendarab nombor sebelumnya dengan 0.2.
*Multiply the previous number by 0.2.*

(d) $\frac{1}{7}, \frac{2}{21}, \frac{4}{63}, \frac{8}{189}, \frac{16}{567}$, ...
$\times\frac{2}{3}$ $\times\frac{2}{3}$ $\times\frac{2}{3}$ $\times\frac{2}{3}$
Mendarab nombor sebelumnya dengan $\frac{2}{3}$.
*Multiply the previous number by $\frac{2}{3}$.*

(e) 18, 23, 30, 41, 54, ...
+5 +7 +11 +13
Menambah nombor perdana bermula dengan 5 kepada nombor sebelumnya.
*Add prime numbers starting with 5 to the previous number.*

**3.** (a) Nombor genap/ *Even numbers*:
14, 20, 26, 32, 38, 44
Pola/ *Pattern*:
Menambah 6 kepada nombor sebelumnya.
*Adding 6 to the previous number.*

(b) Nombor ganjil/ *Odd numbers*:
13, 17, 21, 25, 29, 33
Pola/ *Pattern*:
Menambah 4 kepada nombor sebelumnya.
*Adding 4 to the previous number.*

**4.** (a)

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | 1 | | | |
| | | 1 | | 1 | | |
| | 1 | | 2 | | 1 | |
| 1 | | 3 | | 3 | | 1 |
| | 4 | | 6 | | 4 | |
| 1 | | 5 | | 10 | | 1 |
| | 10 | | 10 | | 5 | |
| 1 | | 6 | | 15 | | 1 |
| | 20 | | 15 | | 6 | |
| 1 | | 6 | | 15 | | 1 |

(b)

| | | | | |
|---|---|---|---|---|
| | | 2 | | |
| | 3 | | 3 | |
| 4 | | 6 | | 4 |
| | 5 | | 10 | |
| 10 | | 10 | | 5 |
| | 6 | | 15 | |
| 20 | | 15 | | 6 |

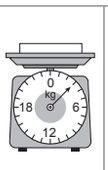
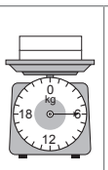
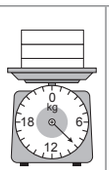
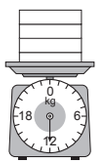
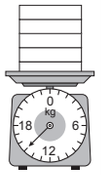
(c) [1], 1, 2, 3, [5], 8, [13], ...

(d) 4, 9, [13], 22, 35, [57], [92], 149, ...

(e) 1, 3, 4, 7, [11], [18], 29, [47], ...

(f) [14], 16, 30, [46], [76], 122, 198, ...

**5.**

| **Pola** *Pattern* |  |  |  |  |  |
|---|---|---|---|---|---|
| **Berat** *Weight* | 3 kg | 6 kg | 9 kg | 12 kg | 15 kg |

(a) 3, 6, 9, 12, 15
(b) Menambah 3 kg / *Adding* 3 kg

**6.** (a) ✓ (b) ✗

**7.** (a) +3 +4 +6 +6 +7
7, 10, 14, 20, 26, 33, ...
Bukan jujukan kerana set nombor ini tidak mengikut pola tertentu.
*Not a sequence because this number set does not follow a particular pattern.*



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(b) ÷3 ÷3 ÷3 ÷3
1 296, 432, 144, 48, 16, ...

Jujukan kerana polanya ialah membahagi nombor sebelumnya dengan 3.
*A sequence because the pattern is dividing the previous number by* 3.

**8.** (a) 12, 96, 768, 6 144, 49 152, ...
×8 ×8 ×8 ×8

(b) 89, 84, 79, 74, 69, 64, 59, ...
−5 −5 −5 −5 −5 −5

(c) −32, −25, −18, −11, −4, 3, 10, ...
+7 +7 +7 +7 +7 +7

(d) −3 584, 896, −224, 56, −14, ...
÷(−4) ÷(−4) ÷(−4) ÷(−4)

**9.** (a) 3, [−12], [48], [−192], [768], [−3 072], ...

(b) 86, [93], [100], [107], [114], ...

(c) 2 187, [729], [243], [81], [27], [9], ...

**10.** (a) **Jujukan nombor/** ***Number sequence***:

75, 68, 61, 54, 47, ...
−7 −7 −7 −7

**Nombor/** ***Number***:
Pola ialah −7.
*The pattern is* −7.

**Perkataan/** ***Words***:
Menolak 7 daripada nombor sebelumnya.
*Subtracting 7 from the previous number.*

**Ungkapan algebra/** ***Algebraic expression***:

$n$: 0, 1, 2, 3, …
(×(−7)) → $-7n$: 0, −7, −14, −21, −28, …
(+75) → $75 - 7n$: 75, 68, 61, 54, 47, …

Maka, $75 - 7n$ dengan keadaan $n = 0, 1, 2, 3, \ldots$
*Thus,* $75 - 7n$ *where* $n = 0, 1, 2, 3, \ldots$

(b) **Jujukan nombor/** ***Number sequence***:

$\frac{1}{3}, \frac{1}{6}, \frac{1}{12}, \frac{1}{24}, \ldots$
$\times\frac{1}{2}$ $\times\frac{1}{2}$ $\times\frac{1}{2}$

**Nombor/** ***Number***:
Pola ialah $\times\frac{1}{2}$. / *The pattern is* $\times\frac{1}{2}$.

**Perkataan/** ***Words***:
Mendarab nombor sebelumnya dengan $\frac{1}{2}$.
*Multiplying the previous number by* $\frac{1}{2}$.

**Ungkapan algebra/** ***Algebraic expression***:

$n$: 0, 1, 2, 3, …
$\left(\frac{1}{2}\right)^n$: $1, \frac{1}{2}, \frac{1}{4}, \frac{1}{8}, \ldots$
$\times\frac{1}{3}$: $\frac{1}{3}\left(\frac{1}{2}\right)^n$: $\frac{1}{3}, \frac{1}{6}, \frac{1}{12}, \frac{1}{24}, \ldots$

Maka, $\frac{1}{3}\left(\frac{1}{2}\right)^n$ dengan keadaan $n = 0, 1, 2, 3, \ldots$
*Thus,* $\frac{1}{3}\left(\frac{1}{2}\right)^n$ *where* $n = 0, 1, 2, 3, \ldots$

**11.** (a) +7 +7 +7 +7 +7
−30, −23, −16, −9, −2, 5, ...

Sebutan ke-6 ialah 5.
*The 6th term is* 5.

(b) ×3 ×3 ×3 ×3 ×3
$\frac{1}{729}, \frac{1}{243}, \frac{1}{81}, \frac{1}{27}, \frac{1}{9}, \frac{1}{3}, \ldots$

Sebutan ke-6 ialah $\frac{1}{3}$.
*The 6th term is* $\frac{1}{3}$.

(c) ÷8 ÷8 ÷8 ÷8 ÷8
262 144, 32 768, 4 096, 512, 64, 8

Sebutan ke-6 ialah 8.
*The 6th term is* 8.

**12.** (a) +5 +5 +5 +5 +5
7, 12, 17, 22, 27, 32, ...
$T_1$ $T_2$ $T_3$ $T_4$ $T_5$ $T_6$

Maka, 32 ialah sebutan ke-6.
*Thus,* 32 *is the 6th term.*

(b) −12 −12 −12 −12 −12
−30, −42, −54, −66, −78, −90, ...
$T_1$ $T_2$ $T_3$ $T_4$ $T_5$ $T_6$

Maka, −90 ialah sebutan ke-6.
*Thus,* −90 *is the 6th term.*

(c) −8 −8 −8 −8 −8 −8 −8 −8 −8
35, 27, 19, 11, 3, −5, −13, −21, −29, −37, ...
$T_1$ $T_2$ $T_3$ $T_4$ $T_5$ $T_6$ $T_7$ $T_8$ $T_9$ $T_{10}$

Maka, −37 ialah sebutan ke-10.
*Thus,* −37 *is the* 10*th term.*

**13.** (a) $3.25 \div 1.625 = 2$
÷2 ÷2 ÷2 ÷2
13, 6.5, 3.25, 1.625, 0.8125, ...

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Maka, $r = 6.5$ dan $s = 0.8125$.
*Thus, $r = 6.5$ and $s = 0.8125$.*

(b) +15 +15 +15
30, 45, 60, 75, ...

Masa yang diluang bersama anaknya pada minggu ke-4 ialah 75 minit.
*The time spent with her son on the 4th week is 75 minutes.*

(c) +2 +3 +4 +5
1, 3, 6, 10, 15, ...
$T_1$ $T_2$ $T_3$ $T_4$ $T_5$

Bilangan bulatan pada susunan ke-5 ialah 15.
*The number of circles in the 5th arrangement is 15.*

(d)

| Baris/ *Row* | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| Bilangan bentuk *Number of shapes* | 7 | 6 | 5 | 4 | 3 | 2 | 1 |

(i) Baris kelima
*Fifth row*

(ii) Jumlah bentuk yang diperlukan
*Total shapes needed*
$= 7 + 6 + 5 + 4 + 3 + 2 + 1$
$= 28$

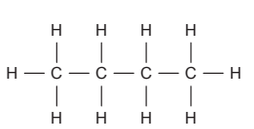
(e) Wang yang disimpan oleh Putri setiap bulan (RM) selama 24 bulan
*The money saved by Putri every month* (RM) *for* 24 *months*

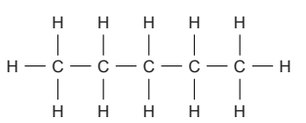
30, 40, 50, 60, 70, 80, 90, 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200, 210, 220, 230, 240, 250, 260

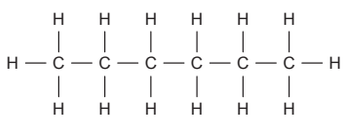
Jumlah wang yang disimpan oleh Putri setiap bulan
*The total money saved by Putri every month*
$= 30 + 40 + 50 + 60 + \ldots + 260$
= RM3 480

Maka, Putri tidak dapat membeli komputer riba itu kerana dia masih kekurangan RM20 (RM3 500 – RM3 480).
*Thus, Putri is not able to buy the laptop because she still short for* RM20 (RM3 500 – RM3 480).

**14.** (a)







(b) $C_nH_{2n+2}$, $n = 1, 2, 3, \ldots$

## Praktis Masteri 1

### BAHAGIAN A

**1.** 0.19, 0.2, $x$, 0.28, 0.35
+ 0.01 + 0.03 + 0.05 + 0.07
$x = 0.2 + 0.03 = 0.23$

Jawapan / *Answer*: **C**

**2.** $\frac{2}{3}, \frac{1}{2}, \frac{1}{3}, \frac{1}{6}, \ldots$
$-\frac{1}{6}, -\frac{1}{6}, -\frac{1}{6}$

Jawapan / *Answer*: **D**

**3.** Nombor Fibonacci / *Fibonacci numbers*
0, 1, 1, 2, 3, …

Jawapan / *Answer* : **C**

**4.** $T_1 = 1^2 = 1$
$T_2 = 2^2 = 4$
$T_3 = 3^2 = 9$
$T_4 = 4^2 = 16$
$T_5 = 5^2 = 25$
$T_6 = 6^2 = 36$
$T_7 = 7^2 = 49$

Jawapan / *Answer*: **D**

### BAHAGIAN B

**5.** $a = 27$; $c = -9$
$b = 15$; $d = -21$

**6.**

| **Jujukan nombor** ***Number sequence*** | **Bukan jujukan nombor** ***non-number sequence*** |
|---|---|
| 34, 39, 44, 49<br>Pola / *Pattern*:<br>Tambah 5 kepada nombor sebelumnya.<br>*Adding 5 to the previous number.* | 40, 42, 44, 49 |

**7.**

| | |
|---|---|
| –28, –16, –4, 8, ... | ÷5 |
| $\frac{5}{24}, \frac{5}{36}, \frac{5}{54}, \frac{5}{81}, \ldots$ | +12 |
| 2.2, 1.6, 1.0, 0.4, ... | –0.6 |
| 14 250, 2 850, 570, 114, ... | $\times \frac{2}{3}$ |



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## BAHAGIAN C

**8.** (a) (i) Menolak 280 daripada nombor sebelumnya.
*Subtracting 280 from the previous number.*

(ii) 4 434, 4 154

(b) $\frac{1}{6}, \frac{1}{3}, p, \frac{2}{3}, \ldots$

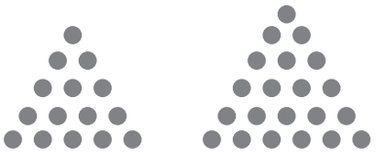
$\frac{1}{6}, \frac{2}{6}, p, \frac{4}{6}, \ldots$

$p = \frac{2}{6} + \frac{1}{6}$

$p = \frac{3}{6}$

$= \frac{1}{2}$

(c) (i)



(ii) Jujukan nombor / *Number sequence*

1, 3, 6, 10, 15, 21, ...

Ungkapan Algebra / *Algebraic Expression*

$1 = \frac{1(1+1)}{2}$

$3 = \frac{2(2+1)}{2}$

$6 = \frac{3(3+1)}{2}$

$10 = \frac{4(4+1)}{2}$

$15 = \frac{5(5+1)}{2}$

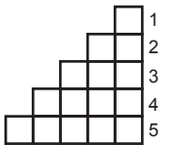
$21 = \frac{6(6+1)}{2}$

Maka, pola bagi jujukan tersebut boleh ditulis sebagai $\frac{n(n+1)}{2}$ dengan keadaan $n = 1, 2, 3, \ldots$

*Therefore, the pattern of the sequence can be written as* $\frac{n(n+1)}{2}$ *where* $n = 1, 2, 3, \ldots$

## Fokus KBAT

(a)




Bilangan blok kubik yang diperlukan untuk satu bahagian
*The number of cubic blocks needed for one section*
$= 15$

Jumlah blok kubik yang diperlukan
*The total of cubic blocks needed*
$= 4 \times 15 + 6 = 66$

(b) Bilangan blok kubik yang diperlukan untuk satu bahagian
*The number of cubic blocks needed for one section*
$= 15 + 6 = 21$
Jumlah blok kubik yang diperlukan
*The total of cubic blocks needed*
$= 4 \times 21 + 7 = 91$

(c) Jumlah blok kubik yang diperlukan bagi setiap ketinggian
*Total of cubic blocks needed for each height*
6, 15, 28, 45, 66, 91, …
Ungkapan algebra / *Algebraic expression*:
$6 = 2[2(2) - 1]$
$15 = 3[2(3) - 1]$
$28 = 4[2(4) - 1]$
$45 = 5[2(5) - 1]$
$66 = 6[2(6) - 1]$
$91 = 7[2(7) - 1]$
Maka, ketinggian model tersebut boleh ditulis sebagai $n[2n - 1]$ dengan keadaan $n = 2, 3, 4, 5, 6, 7, \ldots$.
*Therefore, the height of the model can be written as* $n[2n - 1]$ *where* $n = 2, 3, 4, 5, 6, 7, \ldots$.

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