Bahagian A / *Section A*

1. **A**: $-9 \times (-10) + 5 - (-2) = 97$
   B: $-9 + (-10) \times 5 - (-2) = -57$
   C: $-9 - (-10) + 5 \times (-2) = -9$
   D: $-9 \times (-10) - 5 + (-2) = 83$

   Jawapan / *Answer*: **A**

2. $$\boxed{-\frac{7}{10}, \; \frac{1}{10}, \; \frac{3}{5}, \; -\frac{2}{5}}$$

   $$-\frac{2}{5} = -\frac{4}{10}$$
   $$\frac{3}{5} = \frac{6}{10}$$

   Tertib menurun / *Descending order*:

   $$\frac{3}{5}, \; \frac{1}{10}, \; -\frac{2}{5}, \; -\frac{7}{10}$$

   Jawapan / *Answer*: **A**

3. $P = 3.779 + [(3.784 - 3.779) \div 5 \times 2]$
   $\quad = 3.779 + (0.005 \div 5 \times 2)$
   $\quad = 3.779 + 0.002$
   $\quad = 3.781$

   Jawapan / *Answer*: **C**

4. **A**: $2.2 = 2\frac{1}{5}$ ✓

   B: $0.35 = \frac{7}{20}$ ✓

   C: $0.28 = \frac{7}{25}$ ✗

   D: $0.15 = \frac{3}{20}$ ✓

   Jawapan / *Answer*: **C**

5.

2	24	48	60
2	12	24	30
3	6	12	15
	2	4	5

   Faktor sepunya terbesar
   Highest common factor
   $= 2 \times 2 \times 3$
   $= 12$

   Jawapan / *Answer*: **D**

6.

3	15	45
5	5	15
3	1	3
	1	1

   Gandaan sepunya terkecil
   Highest common factor
   $= 3 \times 5 \times 3$
   $= 45$

   15, 30, 45, 60, 75, 90, …
   45, 90, …

   Jawapan / *Answer*: **B**

7.

3	15	24	30
5	5	8	10
2	1	8	2
4	1	4	1
	1	1	1

   Gandaan sepunya terkecil
   Lowest common multiple
   $= 3 \times 5 \times 2 \times 4$
   $= 120$

   Jawapan / *Answer*: **A**

8. Jawapan / *Answer*: **A**

9. **A**: $\sqrt{\frac{1}{49}} = \frac{1}{7}$

   B: $\sqrt[3]{\frac{1}{343}} = \frac{1}{7}$

   C: $\sqrt{\frac{2}{14}} \neq \frac{1}{7}$

   D: $1 + \sqrt[3]{-\frac{216}{343}} = 1 - \frac{6}{7} = \frac{1}{7}$

   Jawapan / *Answer*: **C**

10. $(\sqrt[3]{p} - \sqrt{4})^2 = 4$

$\sqrt[3]{p} - \sqrt{4} = \sqrt{4}$

$\sqrt[3]{p} - 2 = 2$

$\sqrt[3]{p} = 2 + 2$

$= 4$

$p = 4^3$

$= 64$

Jawapan / *Answer*: **D**

11. $p : q = 6 : 5$

$= 12 : 10$

$q : r = 10 : 3$

$p : q : r = 12 : 10 : 3$

Jawapan / *Answer*: **A**

12. $m : n = 3 : 5$

$3m - n : 4m = 3(3) - 5 : 4(3)$

$= 9 - 5 : 12$

$= 4 : 12$

$= 1 : 3$

Jawapan / *Answer*: **B**

13. Jumlah dua bahagian yang lebih kecil
The sum of two smaller parts

$= 2 + 3 = 5$

3 bahagian / *parts* → RM90

1 bahagian / *part* → RM90 ÷ 3

$= $ RM30

Nilai bagi bahagian yang paling kecil
The value of the smallest part

$= 2 × $ RM30

$= $ RM60

Jawapan / *Answer*: **C**

14. Nilai bagi 1 bahagian / *The value of* 1 *part*

$= $ RM640 ÷ (1 + 4 + 3)

$= $ RM640 ÷ 8

$= $ RM80

Murid / *Student K*

$= $ RM80

Murid / *Student I*

$= $ RM80 × 4

$= $ RM320

Murid / *Student J*

$= $ RM80 × 3

$= $ RM240

Jawapan / *Answer*: **D**

15. Jawapan / *Answer*: **C**

16. $(3p - q) - (p - 4q)$

$= 3p - q - p + 4q$

$= 2p + 3q$

Jawapan / *Answer*: **B**

17. $2gh × 5hr$

$= 10gh^2r$

Jawapan / *Answer*: **D**

18. $2(x + 1) = 4$

$2x + 2 = 4$

$2x = 4 - 2$

$= 2$

$x = 1$

Jawapan / *Answer*: **C**

19. $4m + 2n = 6$ .... ①

$2m - 4n = 18$ .... ②

① × 2:

$8m + 4n = 12$ .... ③

② + ③:

$2m + 8m - 4n + 4n = 18 + 12$

$10m = 30$

$m = 3$

Jawapan / *Answer*: **C**

20. $-2h - (-4h)$

$= -2h + 4h$

$= 2h$

Jawapan / *Answer*: **C**

Bahagian B / *Section B*

1. (a) $\dfrac{1}{4}$

(b) $1\dfrac{1}{2} = 1.5$

(c) 2

(d) $1.5 - \dfrac{1}{4}$

$= 1\dfrac{1}{4}$ atau / *or* $\dfrac{5}{4}$ atau / *or* 1.25

2. (a) $S = 4\dfrac{1}{4}$

(b)
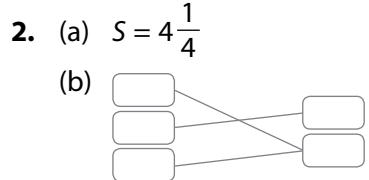
3. (a) $18 ÷ 2$

$= 9$

Faktor perdana bagi 72 ialah 2 dan 3.
The prime factors of 72 are 2 and 3.

(b) (i) $42 ÷ 3 = 14$

$42 ÷ 4 = 10.5$

Palsu / *False*

(ii) $136 \div 4 = 34$
$136 \div 8 = 17$
$136 \div 17 = 8$
Benar / *True*

4. $\left(\sqrt[3]{-1\frac{61}{64}} \div \sqrt{\frac{25}{4}} \right)^2 = \left(\sqrt[3]{-\frac{125}{64}} \div \boxed{\frac{5}{2}} \right)^2$

$= \left(\boxed{-\frac{5}{4}} \times \boxed{\frac{2}{5}} \right)^2$

$= \boxed{\frac{1}{4}}$

5. (a) (i) $32 : 40 = 32 \times 1.5 : 40 \times 1.5$
$= 48 : 60$ (✗)

(ii) $10 : 26 = 10 \times 2.5 : 26 \times 2.5$
$= 25 : 65$ (✓)

(b) (i) $RM1.20 \div 3 \times 8$
$= RM3.20$

(ii) $RM4.40 \div 8 \times 3$
$= RM1.65$
$= RM3.20$

Bahagian C / *Section C*

1. (a) (i) Penurunan lif 8 tingkat
The lift going down 8 floors
$= -8$

(ii) Kedudukan penyu 5 m di bawah aras laut
The position of a turtle at 5 m below sea level
$= -5$

(iii) Kerugian sebanyak RM3 000
The loss of RM3 000
$= -3\,000$

(b) $-0.5 \times \left(2\frac{1}{2} - 1.4 \right)$

$= -\frac{1}{2} \times \left(\frac{5}{2} - \frac{7}{5} \right)$

$= -\frac{1}{2} \times \left(\frac{25}{10} - \frac{14}{10} \right)$

$= -\frac{1}{2} \times \frac{11}{10}$

$= -\frac{11}{20}$

(c) (i) $6\frac{1}{5} - 4\frac{1}{2}$

$= \frac{31}{5} - \frac{9}{2}$

$= \frac{62}{10} - \frac{45}{10}$

$= \frac{17}{10}$

$= 1\frac{7}{10}$ m

(ii) $-6\frac{1}{5} + 45.6$

$= -6.2 + 45.6$

$= 39.4$ m

39.4 m di atas aras laut.
39.4 m above sea level.

2. (a) (i) $a = 3 \div 21 \times 14$
$= 2$

(ii) $a = 2 \div 1.6 \times 2.4$
$= 3$

(iii) $a = 18 \div 2.25 \times 3.125$
$= 25$

(b) (i)

| 2	6	18	30
3	3	9	15
3	1	3	5
5	1	1	5
	1	1	1

Gandaan sepunya terterkecil
Lowest common multiple
$= 2 \times 3 \times 3 \times 5$
$= 90$

(ii) Faktor sepunya terbesar
Highest common factor
$= 2 \times 3$
$= 6$

$(m + 4) = 6$
$m = 6 - 4$
$= 2$

(c) Bilangan jubin yang diperlukan
The number of tiles needed
$= (4.95 \div 0.45) \times (4.5 \div 0.45)$
$= 11 \times 10$
$= 110$

3. (a) (i) Kuasa tiga sempurna yang terletak di antara 200 dengan 400
The perfect cubes between 200 and 400
$= 216$ dan / *and* 343

Beza / *Difference*
$= 343 - 216$
$= 127$

(ii)

$60 = 2 \times 2 \times 3 \times 5$
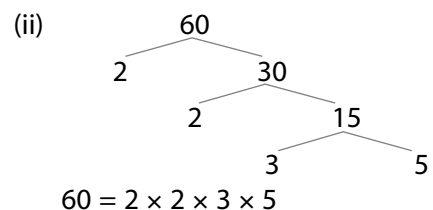
(b) (i) $x \times x \times x = 729$

$$x^3 = 729$$
$$x = \sqrt[3]{729}$$
$$= 9$$

(ii) Isi padu kubus kecil
The volume of small cube
$= 729 \div 8$
$= 91.125$

$\sqrt[3]{91.125} = 4.5$

Maka, isi padu kubus kecil itu bukan kuasa tiga sempurna.
Therefore, the volume of the small cube is not a perfect cube.

(b) Nilai bagi 1 bahagian nisbah
The value of 1 part of ratio
$= \text{RM}1\,152 \div (7 + 2 + 3)$
$= \text{RM}96$

Pertambahan wang Lisa
Lisa's money increase by
$= \dfrac{25}{100} \times (96 \times 7)$
$= 0.25 \times 672$
$= \text{RM}168$

Pertambahan wang Alvin
Alvin's money increase by
$= \dfrac{50}{100} \times (96 \times 2)$
$= 0.5 \times 192$
$= \text{RM}96$

Peratus pertambahan wang Edward
The percentage increase of Edward's money
$= \dfrac{300 - 158 - 96}{26 \times 3} \times 100\%$
$= \dfrac{36}{288} \times 100\%$
$= 12.5\%$

4. (a) (i) $p^5 = p \times p \times p \times p \times p$

(ii) $(x - 2y)^4 = (x - 2y) \times (x - 2y) \times (x - 2y) \times (x - 2y)$

(iii) $8(1 + k)^3 = 2(1 + k) \times 2(1 + k) \times 2(1 + k)$

(b) Beza antara bilangan murid perempuan dengan murid lelaki
The difference between the number of female and male students
$= (8xy - 3) - 4y$
$= 8xy - 4y - 3$

(c) (i)
$$(3x + 2) + (3x + 2) + 2x = 2(4x - 3) + 2(x + 1)$$
$$8x + 4 = 8x - 6 + 2x + 2$$
$$8x + 4 = 10x - 4$$
$$10x - 8x = 4 + 4$$
$$2x = 8$$
$$x = 4$$

(ii) $5 = (4x - 3) \times (x + 1) - \left(\dfrac{1}{2} \times 2x \times y\right)$

$ = [4(4) - 3] \times (4 + 1) - 4y$
$ = 13 \times 5 - 4y$
$ = 65 - 4y$
$4y = 65 - 5$
$ = 60$
$y = 15$

5. (a) Nilai SGD yang diterima oleh Ahmad
The amount of SGD received by Ahmad
$= (3\,400 - 60) \div 3.34$
$= 3\,340 \div 3.34$
$= \text{SGD } 1\,000$

(b) (i) $2^3 \times \sqrt[3]{-216} \div \sqrt{\dfrac{16}{25}}$

$ = 8 \times (-6) \div \dfrac{4}{5}$
$ = -60$

(ii) $\sqrt[3]{-\dfrac{1}{64}} \times \left(3^2 - \sqrt{1\dfrac{7}{9}}\right)$

$= -\dfrac{1}{4} \times \left(9 - \dfrac{4}{3}\right)$

$= -\dfrac{23}{12}$

(c) Jumlah luas permukaan kubus *M*
The total surface of cube M
$= 6 \times (6 \times 6)$
$= 216$

Jumlah luas permukaan kubus *N*
The total surface of cube N
$= 6 \times (x \times x)$
$= 6x^2$

$\dfrac{9}{4} = \dfrac{216}{6x^2}$
$9(6x^2) = 864$
$54x^2 = 864$
$x^2 = 16$
$x = \sqrt{16}$
$ = 4$

6. (a) (i) Biar x ialah nombor pertama, maka nombor kedua ialah $(54 - x)$.

Let x be the first number, thus the second number is $(54 - x)$.

Hasil tambah bagi dua nombor
The sum of two numbers
$\therefore x + (54 - x) = 54$

(ii) $x - (54 - x) = 22$
$2x - 54 = 22$
$2x = 76$
$x = 38$

(b) $2m + n = 11$ ....①
$m - n = 4$ ....②

① + ②:
$3m = 15$
$m = 5$

Gantikan $m = 5$ ke dalam ②.
Substitute m = 5 into ②.
$5 - n = 4$
$n = 5 - 4$
$= 1$

(c)

3	45	60	90
5	15	20	30
3	3	4	6
2	1	4	2
2	1	2	1
	1	1	1

Bilangan minimum kotak pen penyerlah yang perlu dibeli
The minimum number of highlighters has to buy
$= (3 \times 5 \times 3 \times 2 \times 2) \div 90$
$= 180 \div 90$
$= 2$