Jawapan

Bab 5

1.

(a) Jumlah sudut pedalaman suatu segi tiga ialah 180°. *The total interior angle of a triangle is 180°.* Huruf / *Letter* : *p*	Tetap *Fixed*	Jumlah sudut pedalaman, *p*, suatu segi tiga tidak berubah. *The total interior angle, p, of a triangle does not change.*
(b) Tinggi setiap murid di dalam kelas. *The height of each student in a class.* Huruf / *Letter* : *h*	Berubah *Varied*	Tinggi, *h*, setiap murid adalah berbeza di dalam kelas. *The height, h, of each pupil is different in a class.*
(c) Keputusan Sijil Pelajaran Malaysia (SPM) yang diperoleh Suriani pada tahun 2022. *The results of Sijil Pelajaran Malaysia (SPM) achieved by Suriani in the year* 2022. Huruf / *Letter* : *s*	Tetap *Fixed*	Keputusan SPM, *s*, Suriani pada tahun 2022 adalah tetap. *Suriani's SPM results, s, in year* 2022 *is fixed.*

2. (a) ✗ (b) ✓
(c) ✗ (d) ✓
(c) ✓ (d) ✓

3. (a) $10x$
(b) $x - 9$
(c) $\frac{g+h}{5}$
(d) $5p + 8q$

4. (a) $5(2k - 8) = 5[2(-2) - 8]$
$= 5(-4 - 8)$
$= -60$

(b) $7x + 5y = 7(3) + 5(-4)$
$= 21 - 20$
$= 1$

(c) $\frac{6g - g^2}{h} = \frac{6(-1) - (-1)^2}{-3}$
$= \frac{-6 - 1}{-3}$
$= \frac{7}{3}$
$= 2\frac{1}{3}$

(d) Luas, A cm^2, ialah
Area, A cm^2, *is*
$\frac{1}{2} \times p \times q$
$A = \frac{1}{2} \times 20 \times 15$
$= 150$ cm^2

(e) $50 - 8p = 50 - 8(4)$
$= \text{RM}18$

(f) $T = 3p - 5q$
$= 3(15) - 5(2)$
$= 45 - 10$
$= 35$

5. (a) $4p, 2q ; 2$
(b) $2x, \frac{3y}{5} ; 2$
(c) $mn^2, 2m, 6 ; 3$
(d) $pq, 3p, q, 1 ; 4$
(e) $\frac{3j}{5}, 6h, 2 ; 3$
(f) $xy, 2x^2, 3y, \frac{1}{2} ; 4$

6. (a) (i) $-\frac{1}{2}x^2yz = xy \times \left(-\frac{1}{2}xz\right)$
Pekali / *Coefficient*
$= -\frac{1}{2}xz$

(ii) $-\frac{1}{2}x^2yz = \frac{1}{2}x^2 \times -yz$
Pekali / *Coefficient*
$= \frac{1}{2}x^2$

(iii) $-\frac{1}{2}x^2yz = \frac{1}{2}x \times -xyz$
Pekali / *Coefficient*
$= -xyz$

(b) (i) $7ab^2 = 7b \times ab$
Pekali / *Coefficient*
$= 7b$

(ii) $7ab^2 = b^2 \times 7a$
Pekali / *Coefficient*
$= b^2$

(iii) $7ab^2 = 7ab \times b$
Pekali / *Coefficient*
$= 7ab$

(c) (i) $-3p^3q^2 = 3pq \times (-p^2q)$
Pekali / *Coefficient*
$= -p^2q$

(ii) $-3p^3q^2 = q^2 \times (-3p^3)$
Pekali / *Coefficient*
$= q^2$

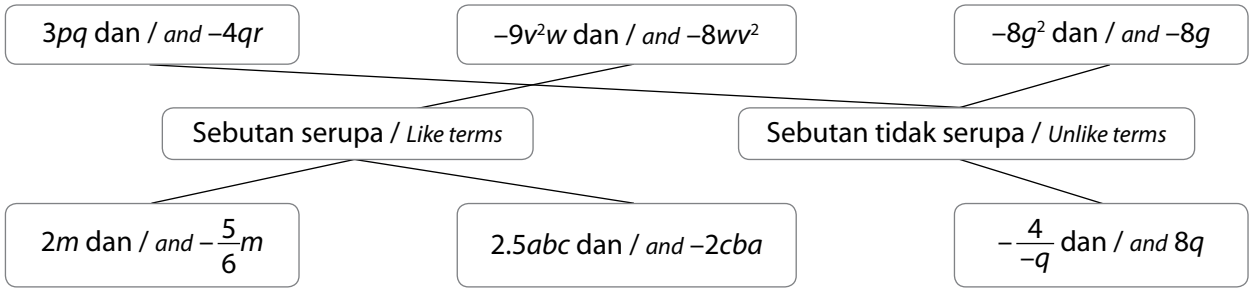
(iii) $-3p^3q^2 = 3p^2q \times (-pq)$
Pekali / *Coefficient*
$= 3p^2q$

(d) (i) $\frac{4}{5}m^2n = mn \times \frac{4}{5}m$
Pekali / *Coefficient*
$= mn$

(ii) $\frac{4}{5}m^2n = \frac{2}{5}m^2 \times 2n$
Pekali / *Coefficient*
$= \frac{2}{5}m^2$

(iii) $\frac{4}{5}m^2n = \frac{4}{5}m \times mn$
Pekali / *Coefficient*
$= \frac{4}{5}m$

7.



8. (a) $(-3pq + 7rs - 5) - (6rs + 7)$
$= -3pq + 7rs - 5 - 6rs - 7$
$= -3pq + 7rs - 6rs - 5 - 7$
$= -3pq + rs - 12$

(b) $(9y - 5z) + (2y - 2z) - (5 + 3x)$
$= 9y - 5z + 2y - 2z - 5 - 3x$
$= -3x + 9y + 2y - 5z - 2z - 5$
$= -3x + 11y - 7z - 5$

(c) $\left(\frac{2}{3}m - 2n\right) - (2m + n - 1)$
$= \frac{2}{3}m - 2n - 2m - n + 1$
$= \frac{2}{3}m - 2m - 2n - n + 1$
$= -\frac{4}{3}m - 3n + 1$

(d) $\frac{2}{3}rs + 11r - \frac{1}{2}rs - (-5r)$
$= \frac{2}{3}rs + 11r - \frac{1}{2}rs + 5r$
$= \frac{2}{3}rs - \frac{1}{2}rs + 11r + 5r$
$= \frac{1}{6}rs + 16r$

(e) $\left(\frac{5}{9}de - fg\right) - \frac{1}{3}ed + (2gf - 4ed)$
$= \frac{5}{9}de - fg - \frac{1}{3}de + 2fg - 4de$
$= \frac{5}{9}de - \frac{1}{3}de - 4de - fg + 2fg$
$= -\frac{34}{9}de + fg$

9. (a) $(pq)^3$ (b) $(-g)^3$
(c) $(2f - 1)^3$ (d) $(a - 2)^2$
(e) $(3kh^2)^5$

10. (a) $(2x - y)^2 = (2x - y) \times (2x - y)$
(b) $(1 + 2g)^3 = (1 + 2g) \times (1 + 2g) \times (1 + 2g)$
(c) $(4dh + eh)^4 = (4dh + eh) \times (4dh + eh) \times (4dh + eh) \times (4dh + eh)$
(d) $(mn)^2 \times (5y - z)^3 = (mn) \times (mn) \times (5y - z) \times (5y - z) \times (5y - z)$

11. (a) $12p \times 2q$
$= 12 \times p \times 2 \times q$
$= 12 \times 2 \times p \times q$
$= 24pq$

(b) $e \times (-e^2f)$
$= e \times (-1) \times e \times e \times f$
$= (-1) \times e^3f$
$= -e^3f$

(c) $\frac{2}{5}g^2 \times (-25gh)$

$= \frac{2}{5} \times g \times g \times (-25) \times g \times h$

$= \frac{2}{\cancel{5}_1} \times (-\cancel{25}^{-5}) \times g \times g \times g \times h$

$= -10g^3h$

(d) $\frac{k}{4} \times (-8k^2) \times 4\frac{1}{2}kn$

$= \frac{1}{4} \times k \times (-8) \times k \times k \times 4\frac{1}{2} \times k \times n$

$= \frac{1}{\cancel{4}_1} \times (\cancel{-8}^{-1}) \times \frac{9}{\cancel{2}_1} \times k \times k \times k \times k \times n$

$= -9k^4n$

(e) $\frac{3}{7}v^2w \times 14vw^2$

$= \frac{3}{7} \times v \times v \times w \times 14 \times v \times w \times w$

$= \frac{3}{\cancel{7}_1} \times \cancel{14}^{2} \times v \times v \times v \times w \times w \times w$

$= 6v^3w^3$

12. (a) $16ef^3 \div 8e^2f$

$= \frac{\cancel{16}^{2} \times \cancel{e} \times \cancel{f} \times f \times f}{\cancel{8}_1 \times \cancel{e} \times e \times \cancel{f}}$

$= \frac{2f^2}{e}$

(b) $g^2 \div 3gh$

$= \frac{g \times \cancel{g}}{3 \times \cancel{g} \times h}$

$= \frac{g}{3h}$

(c) $\frac{24m^2n^3}{2mn}$

$= \frac{\cancel{24}^{12} \times \cancel{m} \times m \times \cancel{n} \times n \times n}{\cancel{2}_1 \times \cancel{m} \times \cancel{n}}$

$= 12mn^2$

(d) $(25x^2 - 5) \div 5x$

$= \frac{25x^2 - 5}{5 \times x}$

$= \frac{\cancel{25}^{5} \times \cancel{x} \times x}{\cancel{5}_1 \times \cancel{x}} - \frac{\cancel{5}^{1}}{\cancel{5}_1 \times x}$

$= 5x - \frac{1}{x}$

(e) $\frac{2k^3 + k}{4k}$

$= \frac{2k^3}{4k} + \frac{k}{4k}$

$= \frac{\cancel{2}^{1} \times \cancel{k} \times k \times k}{\cancel{4}_2 \times \cancel{k}} + \frac{\cancel{k}}{4 \times \cancel{k}}$

$= \frac{k^2}{2} + \frac{1}{4}$

13. (a) $p^2q \div (-10p) \times (-20qr)$

$= \frac{\cancel{p} \times p \times q \times (\cancel{-20}^{2}) \times q \times r}{\cancel{-10}_1 \times \cancel{p}}$

$= 2pq^2r$

(b) $-6g \times hg^3 \div (-12g^2)$

$= \frac{\cancel{-6}^{1} \times \cancel{g} \times h \times \cancel{g} \times g \times g}{\cancel{-12}_2 \times \cancel{g} \times \cancel{g}}$

$= \frac{hg^2}{2}$

(c) $27cd \times c^3 \div (-9c^2d^3)$

$= \frac{\cancel{27}^{3} \times \cancel{c} \times \cancel{d} \times \cancel{c} \times c \times c}{\cancel{-9}_{-1} \times \cancel{c} \times \cancel{c} \times \cancel{d} \times d \times d}$

$= -\frac{3c^2}{d^2}$

(d) $e^2f \div (-4e^2f^2) \times (-2ef^2)$

$= \frac{\cancel{e} \times \cancel{e} \times \cancel{f} \times (\cancel{-2}^{1}) \times e \times \cancel{f} \times f}{\cancel{-4}_2 \times \cancel{e} \times \cancel{e} \times \cancel{f} \times \cancel{f}}$

$= \frac{ef}{2}$

(f) $5mn^3 \times (-5m^2n) \div 10mn$

$= \frac{\cancel{5}^{1} \times \cancel{m} \times \cancel{n} \times n \times n \times (-5) \times m \times m \times n}{\cancel{10}_2 \times \cancel{m} \times \cancel{n}}$

$= -\frac{5n^3m^2}{2}$

14. (a) Tukang cat *A* / *Painter A*,
1 bilik = *m* jam / 1 *room = m hours*

Maka, 1 jam = $\frac{1}{m}$ bahagian bilik dicat

Hence, 1 *hour* = $\frac{1}{m}$ *part of room painted*

Tukang cat *B* / *Painter B*,
1 bilik = *n* jam / 1 *room = n hours*

Maka, 1 jam = $\frac{1}{n}$ bahagian bilik dicat

Hence, 1 *hour* = $\frac{1}{n}$ *part of room painted.*

Apabila bekerja bersama, bahagian bilik yang dapat dicat
When working together, parts of room that can be painted

$= \frac{1}{m} + \frac{1}{n}$

(b) Bahagian bilik dicat dalam masa satu jam
Parts of the room painted in one hour

$= \frac{1}{9} + \frac{1}{6}$

$= \frac{5}{18}$

1 bahagian / *part* $= \frac{1}{\left(\frac{5}{18}\right)}$

$= \frac{18}{5}$ jam / *hours*

$= 3.6$ jam / *hours*

Maka, masa yang diambil untuk mengecat keseluruhan bilik ialah 3.6 jam.
Hence, the time taken to completely paint the room is 3.6 *hours.*

15. › Contoh

$28g^3h \div$ _____ $\times 2k = 14g$

_____ $= 28g^3h \div 14g \times 2k$
$= 2g^2h \times 2k$
$= 4g^2hk$

(a) $2ef \times$ _____ $\div 2e^2 = 2f$

_____ $= 2f \times 2e^2 \div 2ef$
$= 4fe^2 \div 2ef$
$= 2e$

(b) $5b^2k \div (-5b^2) \times$ _____ $= 3kt^2$

$-k \times$ _____ $= 3kt^2$
$= 3kt^2 \div -k$
$= -3t^2$

16. Aktiviti PAK-21

Praktis Masteri 5

BAHAGIAN A

1. Sebutan algebra / *Algebraic term*
$-a^3b = -1 \times a \times a \times a \times b$

Jawapan / *Answer* : **C**

2. $x = -4$ dan / *and* $y = 3$
$x^2 - xy = (-4)^2 - (-4)(3)$
$= 16 - (-12)$
$= 16 + 12$
$= 28$

Jawapan / *Answer* : **D**

3. $9p - 4(2p - 3)$
$= 9p - 8p + 12$
$= p + 12$

Jawapan / *Answer* : **D**

4. Baki panjang tali
The length of remaining rope
$= k - m(2n)$
$= k - 2mn$ meter
k – 2mn metre

Jawapan / *Answer* : **C**

5. **A**: $7r + (-5r)$
$= 7r - 5r$
$= 2r$

B: $2r + 3r + (-7r)$
$= 2r + 3r + (-7r)$
$= 2r + 3r - 7r$
$= -2r$

C: $-7r - 5r$
$= -12r$

D: $5r - (-7r)$
$= 5r + 7r$
$= 12r$

Jawapan / *Answer* : **D**

6. Jawapan / *Answer* : **C**

BAHAGIAN B

7. (a) $\frac{2e}{f}$

(b) $2e^2$

(c) $\frac{2e^2}{3fg}$

(d) $\frac{2}{fg}$

8. (a) Nilai yang berubah
Varied value

(b) Nilai yang berubah
Varied value

(c) Nilai yang tetap
Fixed value

(d) Nilai yang berubah
Varied value

9. (a) 3

(b) 4

(c) 2

(d) 3

BAHAGIAN C

10. (a) (i) Lebar / *Width*

$$\frac{2}{5\cancel{x}} \times 3\cancel{x}y = \frac{6y}{5}$$

$$\text{Perimeter} = 2 \times 3xy + 2 \times \frac{6y}{5}$$

$$= 6xy + \frac{12y}{5}$$

(ii) $\text{Perimeter} = 6 \times \frac{1}{3} \times 5 + \frac{12 \times 5}{5}$

$= 10 + 12$

$= 22$ cm

(b) (i) $5efg \times 5efg \times 5efg \times 5efg = (5efg)^4$

$\therefore n = 4$

(ii) $13s + 8 - 15s$

$= 13s - 15s + 8$

$= -2s + 8$

(c) (i) Katakan h ialah tinggi.

Let h be the height.

$$8r^2s^3 = \frac{1}{2} \times 16rs^2 \times h$$

$$h = \frac{8r^2s^3 \times 2}{16rs^2}$$

$$= \frac{\cancel{16}^{1} \times \cancel{r} \times r \times \cancel{s} \times \cancel{s} \times s}{\cancel{16}_{1} \times \cancel{r} \times \cancel{s} \times \cancel{s}}$$

$= rs$

(ii) Tinggi / *Height*

$= rs$

$= 4 \times 2$

$= 8$ cm

11. (a) $\frac{3}{5}a^2b \times 10ab^3 \div 4a^3b^5$

$$= \frac{3 \times \cancel{a} \times \cancel{a} \times \cancel{b} \times \cancel{10}^{\cancel{2}^{1}} \times \cancel{a} \times \cancel{b} \times \cancel{b} \times \cancel{b}}{\cancel{5}_{1} \times \cancel{4}_{2} \times \cancel{a} \times \cancel{a} \times \cancel{a} \times \cancel{b} \times \cancel{b} \times \cancel{b} \times \cancel{b} \times b}$$

$$= \frac{3}{2b}$$

(b) (i) Jisim tepung dalam sebiji mangkuk

The mass of the flour in a bowl

$$= \frac{3}{4} \times (700 + xy) \div 3y$$

$$= \frac{\cancel{3}^{1} \times (700 + xy)}{4 \times \cancel{3}_{1} \times y}$$

$$= \frac{700 + xy}{4y}$$

(ii) $\frac{700 + xy}{4y} = \frac{700 + 95 \times 4}{4 \times 4}$

$= 67.5$ g

(c) (i) Bilangan guli Ahmad yang tinggal dalam sebutan h dan j

The number of marbles that Ahmad has in terms of h and j

$= 5h - (2j + 3) - (3h - 7)$

$= 5h - 2j - 3 - 3h + 7$

$= 5h - 3h - 2j - 3 + 7$

$= 2h - 2j + 4$

(ii) Bilangan guli yang ada pada Rahimah dalam sebutan j

The number of marbles that Rahimah has in term of j

$= 2j + 3 - j$

$= j + 3$

Fokus KBAT

(a) Katakan z ialah bilangan kemeja-T

Let z is the number of T-shirts

Jumlah kos / *Total cost* $= 20z + 17$

(b) (i) Katakan x dan y masing–masing ialah bilangan gelang tangan dan buku nota yang terjual.

Let x and y are the numbers of wristbands and notebooks sold respectively.

Jumlah kos jualan / *Total cost of sales* $= 2(3x + 5y)$

(ii) Jumlah jualan / *Total sales*

$= 2(3x + 5y) + 35z$

$= 6x + 10y + 35z$

$= 6(300) + 10(100) + 35(300)$

$=$ RM13 300

Jumlah kos / *Total cost*

$= 20(300) + 17 + 3(300) + 5(300)$

$=$ RM8 417

Jumlah dana terkumpul / *Total funds collected*

$=$ RM13 300 – RM8 417

$=$ RM4 883

Ya. Mereka mencapai sasaran seperti yang dirancang daripada jualan tersebut dengan dana terkumpul sebanyak RM4 883 ($>$RM4 000).

Yes. They achieved the target as planned from the sales with fund collected which is RM4 883 ($>$RM4 000).