JAWAPAN

BAB 2 Pemfaktoran dan Pecahan Algebra
Factorisation and Algebraic Fractions

1. (a) $3x(2 + x)$
$= 6x + 3x^2$

(b) $(x + 5)(2x + 1)$
$= 2x^2 + 10x + x + 5$
$= 2x^2 + 11x + 5$

(c) $(2x + 3)(x - 2)$
$= 2x^2 - 4x + 3x - 6$
$= 2x^2 - x - 6$

(d) $(3x - 4)(2x - 3)$
$= 6x^2 - (9x - 12) - (8x - 12) - 12$
$= 6x^2 - 9x + 12 - 8x + 12 - 12$
$= 6x^2 - 17x + 12$

2. (a) $7(4 + 5a)$
$= 28 + 35a$

(b) $4p(p - 3q)$
$= 4p^2 - 12pq$

(c) $-6s(r + 4)$
$= -6rs - 24s$

(d) $-3(y - 7w + 3)$
$= -3y + 21w - 9$

(e) $-\frac{2}{5}x(10y - 15z + 20)$
$= -4xy + 6xz - 8x$

3. (a) $(a - 2b)(11 - b)$
$= a(11 - b) - 2b(11 - b)$
$= 11a - ab - 22b + 2b^2$

(b) $(k - l)(k + 2l)$
$= k(k + 2l) - l(k + 2l)$
$= k^2 + 2kl - kl - 2l^2$
$= k^2 + kl - 2l^2$

(c) $(5 + 6e)(7f - e)$
$= 5(7f - e) + 6e(7f - e)$
$= 35f - 5e + 42ef - 6e^2$

(d) $(3 + 2y)(1 + y)$
$= 3(1 + y) + 2y(1 + y)$
$= 3 + 3y + 2y + 2y^2$
$= 3 + 5y + 2y^2$

(e) $(6q - 1)(4q - 3)$
$= 6q(4q - 3) - 1(4q - 3)$
$= 24q^2 - 18q - 4q + 3$
$= 24q^2 - 22q + 3$

(f) $(4a + 5b)(a - 2b)$
$= 4a(a - 2b) + 5b(a - 2b)$
$= 4a^2 - 8ab + 5ab - 10b^2$
$= 4a^2 - 3ab - 10b^2$

(g) $(-7h + 3)(h - 5)$
$= -7h(h - 5) + 3(h - 5)$
$= -7h^2 + 35h + 3h - 15$
$= -7h^2 + 38h - 15$

(h) $(9p + 6)(7 - 4p)$
$= 9p(7 - 4p) + 6(7 - 4p)$
$= 63p - 36p^2 + 42 - 24p$
$= 39p - 36p^2 + 42$

(i) $(4p - q)(p + q)$
$= 4p(p + q) - q(p + q)$
$= 4p^2 + 4pq - pq - q^2$
$= 4p^2 + 3pq - q^2$

(j) $(2r + 2s)(3r + s)$
$= 2r(3r + s) + 2s(3r + s)$
$= 6r^2 + 2rs + 6rs + 2s^2$
$= 6r^2 + 8rs + 2s^2$

(k) $(12 - 3t)(3u + t)$
$= 12(3u + t) - 3t(3u + t)$
$= 36u + 12t - 9ut - 3t^2$

4. (a) $(k + 6)^2$
$= k^2 + 2(k)(6) + 6^2$
$= k^2 + 12k + 36$

(b) $(5p + 2q)^2$
$= (5p)^2 + 2(5p)(2q) + (2q)^2$
$= 25p^2 + 20pq + 4q^2$

(c) $(3 - 4n)^2$
$= 3^2 - 2(3)(4n) + (4n)^2$
$= 9 - 24n + 16n^2$

(d) $(7r - 3)^2$
$= (7r)^2 - 2(7r)(3) + 3^2$
$= 49r^2 - 42r + 9$

(e) $(2a + 9)(2a - 9)$
$= (2a)^2 - 9^2$
$= 4a^2 - 81$

(f) $(5p - 3r)(5p + 3r)$
$= (5p)^2 - (3r)^2$
$= 25p^2 - 9r^2$

5. (a) $(a + b)(a - b) - a(a - 2b)$
$= a^2 - b^2 - a^2 + 2ab$
$= -b^2 + 2ab$

(b) $(3r + s)^2 + s(r + 3s)$
$= 9r^2 + 6rs + s^2 + rs + 3s^2$
$= 9r^2 + 7rs + 4s^2$

(c) $a + b + 8(a + b)$
$= a + b + 8a + 8b$
$= 9a + 9b$

(d) $(5 - 4n)^2 + 2(1 - n)$
$= 25 - 40n + 16n^2 + 2 - 2n$
$= 27 - 42n + 16n^2$

(e) $(g + 3h)^2 + (3g + 4h)(4g - 3h)$
$= g^2 + 6gh + \mathbf{9h^2} + 12g^2 - 9gh + 6gh \mathbf{- 12h^2}$
$= 13g^2 + 13gh - 3h^2$

(f) $(3p - 2)^2 - p(5p - 1)$
$= 9p^2 - 12p + 4 - 5p^2 + p$
$= 4p^2 - 11p + 4$

(g) $-x(x + 3y) - (x + y)^2$
$= -x^2 - 3xy - (x^2 + 2xy + y^2)$
$= -x^2 - 3xy - x^2 - 2xy - y^2$
$= -2x^2 - 5xy - y^2$

(h) $\frac{\cancel{10}^{2}k(7p + k)}{\cancel{5}_{1}} - p(p - 2k)$
$= 2k(7p + k) - p(p - 2k)$
$= 14kp + 2k^2 - p^2 + 2kp$
$= 16kp + 2k^2 - p^2$

6. (a) Baki/ *Balance*
$= 5pq - p(q + 1) - q(p + 2)$
$= 5pq - pq - p - pq - 2q$
$= 3pq - p - 2q$

Baki wang/ *Balance*
$= \text{RM}(3pq - p - 2q)$

(b) Luas tanah / *Area of land* (m^2)
$= (7x + 5)(4x + 3)$
$= 28x^2 + 21x + 20x + 15$
$= 28x^2 + 41x + 15$

(c) Jumlah bayaran di Pasar Raya Ekstra
Total payment in Pasar Raya Ekstra
$= 30s + 15(r + 1)$
$= 30s + 15r + 15$

Jumlah bayaran di Pasar Raya Bajet
Total payment in Pasar Raya Bajet
$= 5(4s) + \left(15 \times \frac{4}{5}(r + 1)\right)$
$\frac{30 \text{ tin/ } cans}{6 \text{ tin/ } cans} = 5$
$= 20s + 12(r + 1)$
$= 20s + 12r + 12$

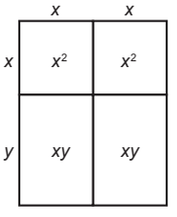
Kerugian/ *Loss*
$= (30s + 15r + 15) - (20s + 12r + 12)$
$= 30s + 15r + 15 - 20s - 12r - 12$
$= 10s + 3r + 3$

Pasar Raya Ekstra menawarkan harga yang lebih mahal berbanding Pasar Raya Bajet.
Pasar Raya Ekstra offers more expensive price compared to Pasar Raya Bajet.

(d) Luas kawasan berlorek
Area of shaded region
= Luas *ABCD* – Luas *EFCG*
Area of ABCD – Area of EFCG
$= (9x + 4)(5y + 1) - (3x)(2y)$
$= 45xy + 9x + 20y + 4 - 6xy$
$= (39xy + 9x + 20y + 4)\ \text{cm}^2$

(e) Luas rangka kayu yang digunakan
Area of the wooden frame used
= 2 × Luas trapezium
Area of trapezium
$= 2 \times \left[\frac{1}{2} \times (5x + 8) \times (x + 2)\right]$ ← Hukum Kalis Sekutuan / *Associative Law*
$= 5x^2 + 10x + 8x + 16$
$= (5x^2 + 18x + 16)\ \text{cm}^2$

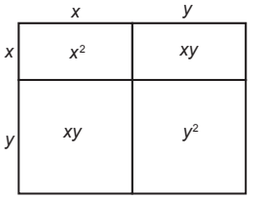
(f) (i) Hasil tambah luas jubin
Sum of the area of tiles
$= x^2 + x^2 + xy + xy$
$= 2x^2 + 2xy$



$(x + y)^2 = (x + y) \times (x + y)$
$= x^2 + xy + xy + y^2$
$= x^2 + 2xy + y^2$

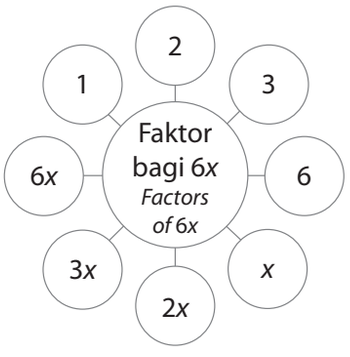
$(x + y)^2 \neq 2x^2 + 2xy$. Maka, jubin algebra yang dibuat adalah salah.
$(x + y)^2 \neq 2x^2 + 2xy$. Thus, the algebraic tiles made is not correct.

(ii)

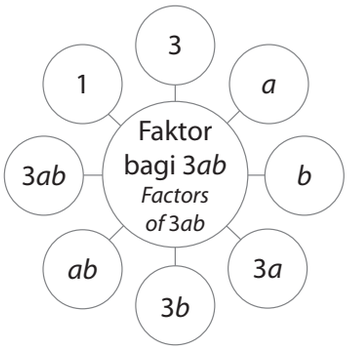


$(x + y)^2 = x^2 + xy + xy + y^2$
$= x^2 + 2xy + y^2$

7. (a)



(b)



8. (a) $8y = 1 \times 8y$
$2 \times 4y$
$4 \times 2y$
$8 \times y$

$8y^2 = 1 \times 8y^2$
$2 \times 4y^2$
$4 \times 2y^2$
$8 \times y^2$
$y \times 8y$
$2y \times 4y$

Faktor sepunya/ *Common factors*:
1, 2, 4, 8, y, $2y$, $4y$ dan/ *and* $8y$

(b) $15ef = 1 \times 3 \times 5 \times e \times f$
$9df = 1 \times 3 \times 3 \times d \times f$
$30f^2 = 1 \times 2 \times 3 \times 5 \times f \times f$

Faktor sepunya/ *Common factors*:
1, 3 dan/ *and* f

9. (a) $14p$, $28pq$

14	$14p,\ 28pq$
p	$p,\ 2pq$
↑	$1,\ 2q$

FSTB/ *HCF* = $14p$

(b) $5k^2lm$, $25kl^2m$

5	$5k^2lm,\ 25kl^2m$
k	$k^2lm,\ 5kl^2m$
l	$klm,\ 5l^2m$
m	$km,\ 5lm$
↑	$k,\ 5l$

FSTB/ *HCF* = $5klm$

10. (a) $14m + 21m^2$

7	$14m + 21m^2$
m	$2m + 3m^2$
↑	$2 \quad + 3m$

FSTB/ *HCF* = $7m$

Maka, $7m(2 + 3m)$
Thus,

(b) $16y^2 - 64y$

16	$16y^2 - 64y$
y	$y^2 - 4y$
↑	$y \ - 4$

FSTB/ *HCF* = $16y$

Maka, $16y(y - 4)$
Thus,

(c) $15p^2q - 21pq^2$

3	$15p^2q - 21pq^2$
p	$5p^2q - 7pq^2$
q	$5pq \ - 7q^2$
↑	$5p \quad - 7q$

FSTB/ *HCF* = $3pq$

Maka, $3pq(5p - 7q)$
Thus,

(d) $81x^2 - 100$
$= (9x)^2 - 10^2$
$= (9x + 10)(9x - 10)$

(e) $27m^2 - 75$
$= 3(9m^2 - 25)$
$= 3[(3m)^2 - 5^2]$
$= 3(3m - 5)(3m + 5)$

(f) $169u^2 - 225$
$= (13u)^2 - 15^2$
$= (13u + 15)(13u - 15)$

(g) $16z^2 - 100$
$= 4(4z^2 - 25)$
$= 4[(2z)^2 - 5^2]$
$= 4(2z + 5)(2z - 5)$

(h) $25a^2 - 36$
$= (5a)^2 - 6^2$
$= (5a + 6)(5a - 6)$

(i) $243g^3 - 48g$
$= 3g(81g^2 - 16)$
$= 3g[(9g)^2 - 4^2]$
$= 3g(9g - 4)(9g + 4)$

11. (a) $p^2 - 4p - 12$
$= (p + 2)(p - 6)$

(×)				(+)
	p	$+2$	$+2p$	
	p	-6	$-6p$	
	p^2	-12	$-4p$	

(b) $6m^2 - m - 2$
$= (3m - 2)(2m + 1)$

(×)				(+)
	$3m$	-2	$-4m$	
	$2m$	$+1$	$+3m$	
	$6m^2$	-2	$-m$	

(c) $-6x^2 - 7x + 5$
$= (-3x - 5)(2x - 1)$

(×)				(+)
	$-3x$	-5	$-10x$	
	$2x$	-1	$+3x$	
	$-6x^2$	$+5$	$-7x$	

(d) $k^2 - 12k + 36$
$= (k - 6)^2$

(×)				(+)
	k	-6	$-6k$	
	k	-6	$-6k$	
	k^2	$+36$	$-12k$	

(e) $8t^2 + 29t - 12$
$= (8t - 3)(t + 4)$

(×)				(+)
	$8t$	-3	$-3t$	
	t	$+4$	$+32t$	
	$8t^2$	-12	$29t$	

(f) $ab + ac + bd + cd$
$= (ab + ac) + (bd + cd)$
$= a(b + c) + d(b + c)$
$= (b + c)(a + d)$

(g) $pq - p^2 + 3q - 3p$
$= (pq - p^2) + (3q - 3p)$
$= p(q - p) + 3(q - p)$
$= (q - p)(p + 3)$

(h) $bm - bn + cm - cn$
$= (bm - bn) + (cm - cn)$
$= b(m - n) + c(m - n)$
$= (m - n)(b + c)$

(i) $wp - hp - wq + hq$
$= (wp - hp) - (wq - hq)$
$= p(w - h) - q(w - h)$
$= (w - h)(p - q)$

(j) $3h^2 + 12h - 2hk - 8k$
$= (3h^2 + 12h) - (2hk + 8k)$
$= 3h(h + 4) - 2k(h + 4)$
$= (h + 4)(3h - 2k)$

12. (a) $4x^2 - 12x + 9$
$= (2x)^2 - 2(2x)(3) + 3^2$
$= (2x - 3)(2x - 3)$

Panjang sisi padang = $(2x - 3)$ m
Side length of field

Perimeter $= 4(2x - 3)$
$= (8x - 12)$ m

(b) $n^2 - 1 = (n + 1)(n - 1)$

Beza umur
Difference in ages
$= n + 1 - (n - 1)$
$= n + 1 - n + 1$
$= 2$

(c)

Buah/ ***Fruit***	**Bilangan buah/** ***Number of fruits***	**Harga sebiji/** ***Price per*** **(RM)**	**RM**
Oren/ *Orange*	10	y	$10y$
Epal/ *Apple*	8	$y - 0.1$	$8(y - 0.1)$
Pear/ *Pear*	5	$y + 0.5$	$5(y + 0.5)$

Jumlah bayaran / *Total payment*
$= 10y + 8(y - 0.1) + 5(y + 0.5)$
$= 10y + 8y - 0.8 + 5y + 2.5$
$= \text{RM}(23y + 1.7)$

(d) (i) $300xy - 150x + 900y - 450$
$= 150(2xy - x + 6y - 3)$
$= 150[x(2y - 1) + 3(2y - 1)]$
$= 150(x + 3)(2y - 1)$

Dimensi jubin / *Dimension of a tile*
$= (x + 3)$ m $\times (2y - 1)$ m

(ii) 150 keping jubin / *tiles*

(e) $(80 - 1)(80 + 1) = 80^2 - 1^2$
$= 6\,400 - 1$
$= 6\,399$

13. (a) $(h + k)(h - k) - (h^2 + k^2)$
$= h^2 - k^2 - h^2 - k^2$
$= -2k^2$

(b) $(p + q)^2 + (2p + 3q)(3p - 2q)$
$= p^2 + 2pq + q^2 + 6p^2 - 4pq + 9pq - 6q^2$
$= 7p^2 + 7pq - 5q^2$

(c) $\dfrac{3p + 2q}{p - 2q} - \dfrac{p - 5q}{p - 2q}$
$= \dfrac{3p + 2q - p + 5q}{p - 2q}$
$= \dfrac{2p + 7q}{p - 2q}$

(d) $\dfrac{4m - 3n}{2m + 3n} + \dfrac{3m - 4n}{2m + 3n}$
$= \dfrac{4m - 3n + 3m + 4n}{2m + 3n}$
$= \dfrac{7m + n}{2m + 3n}$

(e) $\dfrac{3n}{12m^2} + \dfrac{5n}{4m^2}$
$= \dfrac{3n}{12m^2} + \dfrac{5n \times 3}{4m^2 \times 3}$
$= \dfrac{3n + 15n}{12m^2}$
$= \dfrac{18n}{12m^2}$

(f) $\dfrac{3h^2}{2k} - \dfrac{7h^2}{10k}$
$= \dfrac{3h^2 \times 5}{2k \times 5} - \dfrac{7h^2}{10k}$
$= \dfrac{15h^2 - 7h^2}{10k}$
$= \dfrac{8h^2}{10k}$
$= \dfrac{4h^2}{5k}$

(g) $\dfrac{c}{5d} - \dfrac{3}{4c}$
$= \dfrac{c \times 4c}{5d \times 4c} - \dfrac{3 \times 5d}{4c \times 5d}$
$= \dfrac{4c^2 - 15d}{20cd}$

(h) $\frac{1}{7z}+\frac{5}{6z}$

$=\frac{1\times 6}{7z\times 6}+\frac{5\times 7}{6z\times 7}$

$=\frac{6+35}{42z}$

$=\frac{41}{42z}$

(i) $\frac{p}{6q}-\frac{3p}{10qr}$

$=\frac{p\times 5r}{6q\times 5r}-\frac{3p\times 3}{10qr\times 3}$

$=\frac{5pr-9p}{30qr}$

(j) $\frac{3}{2mn}+\frac{n}{6m^2}$

$=\frac{3\times 3m}{2mn\times 3m}+\frac{n\times n}{6m^2\times n}$

$=\frac{9m+n^2}{6m^2n}$

14. (a) $\frac{3m}{m^2-9}\times\frac{m^2+m-6}{6m^2}$

$=\frac{\cancel{3m}^{\,1}}{(m-3)(\cancel{m+3})_{\,1}}\times\frac{(m-2)(\cancel{m+3})^{\,1}}{\cancel{6m^2}_{\,2m}}$

$=\frac{(m-2)}{2m(m-3)}$

(b) $\frac{p^2+p}{2pq+4p}\times\frac{q+2}{3p+3}$

$=\frac{\overset{1}{\cancel{p}}(p+1)}{\underset{1}{2\cancel{p}}(\cancel{q+2})}\times\frac{\cancel{q+2}^{\,1}}{3(\cancel{p+1})_{\,1}}$

$=\frac{1}{6}$

(c) $\frac{1}{1-x^2}\times xy+x^2y$

$=\frac{1}{(1-x)(\cancel{1+x})_{\,1}}\times xy(\cancel{1+x})^{\,1}$

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

(d) $\frac{my-ny}{x+y}\times\frac{x^2-y^2}{m^2-mn}$

$=\frac{y(\cancel{m-n})^{\,1}}{\cancel{x+y}_{\,1}}\times\frac{(x+y)\overset{1}{(x-y)}}{m(\cancel{m-n})_{\,1}}$

$=\frac{y(x-y)}{m}$

(e) $\frac{4a-4b}{9b}\div\frac{a-b}{18a}$

$=\frac{4\overset{1}{(\cancel{a-b})}}{\underset{1}{\cancel{9b}}}\times\frac{\overset{2}{\cancel{18a}}}{\cancel{a-b}_{\,1}}$

$=\frac{8a}{b}$

(f) $\frac{3q-1}{3q-21}\div\frac{q-5}{4q-28}$

$=\frac{3q-1}{3(\cancel{q-7})_{\,1}}\times\frac{4\overset{1}{(\cancel{q-7})}}{q-5}$

$=\frac{4(3q-1)}{3(q-5)}$

(g) $\frac{3x+3y}{4z+2}\div\frac{x^2-y^2}{4z^2+4z+1}$

$=\frac{3\overset{1}{(\cancel{x+y})}}{2(\underset{1}{\cancel{2z+1}})}\times\frac{\overset{1}{(\cancel{2z+1})}(2z+1)}{\underset{1}{(\cancel{x+y})}(x-y)}$

$=\frac{3(2z+1)}{2(x-y)}$

(h) $\frac{(y+3)^2}{16-x^2}\div\frac{3y+9}{8-2x}$

$=\frac{(y+3)^2}{4^2-x^2}\times\frac{8-2x}{3y+9}$

$=\frac{(y+3)(\cancel{y+3})^{\,1}}{(4+x)(\cancel{4-x})_{\,1}}\times\frac{2(\cancel{4-x})^{\,1}}{3(\cancel{y+3})_{\,1}}$

$=\frac{2(y+3)}{3(4+x)}$

15. (a) $4(p-q)^2\times 6(p+q)\div 12(p^2-q^2)$

$=\frac{4(p-q)^2\times 6(p+q)}{12(p^2-q^2)}$

$=\frac{\overset{1}{\cancel{4}}(p-q)(\cancel{p-q})^{\,1}\times\overset{2}{\cancel{6}}(\cancel{p+q})^{\,1}}{\underset{1}{\overset{3}{\cancel{12}}}(\underset{1}{\cancel{p-q}})(\underset{1}{\cancel{p+q}})}$

$=2(p-q)$

(b) $\frac{(p+q)(p-3q)+3q^2}{4p-8q}$

$=\frac{p^2-3pq+pq-3q^2+3q^2}{4(p-2q)}$

$=\frac{p^2-2pq}{4(p-2q)}$

$=\frac{p(\cancel{p-2q})^{\,1}}{4(\underset{1}{\cancel{p-2q}})}$

$=\frac{p}{4}$

(c) $\frac{a^2+2ab+b^2}{3c} \div \frac{a+b}{3} + ab$

$= \frac{(a+b)\overset{1}{\cancel{(a+b)}}}{\underset{1}{\cancel{3c}}} \times \frac{\overset{1}{\cancel{3}}}{\underset{1}{\cancel{a+b}}} + ab$

$= \frac{a+b}{c} + ab$

$= \frac{a+b+abc}{c}$

(d) $(m^2+2m+1) \div (m^2-1) - \frac{2}{m+1}$

$= \frac{m^2+2m+1}{m^2-1} - \frac{2}{m+1}$

$= \frac{m^2+2m+1}{(m+1)(m-1)} - \frac{2(m-1)}{(m+1)(m-1)}$

$= \frac{m^2+2m+1-2m+2}{m^2-1}$

$= \frac{m^2+3}{m^2-1}$

(e) $\frac{2px+qx+2py+qy}{10x+10y} \div \frac{8p+4q}{x^2-y^2}$

$= \frac{x(2p+q)+y(2p+q)}{10(x+y)} \times \frac{(x+y)(x-y)}{4(2p+q)}$

$= \frac{(x+y)\overset{1}{\cancel{(2p+q)}}}{10\underset{1}{\cancel{(x+y)}}} \times \frac{\overset{1}{\cancel{(x+y)}}(x-y)}{4\underset{1}{\cancel{(2p+q)}}}$

$= \frac{(x+y)(x-y)}{40}$

$= \frac{x^2-y^2}{40}$

Power PT3

Bahagian A

1. $x(-2x-5)$
$= -2xy - 5x$

Jawapan / *Answer*: **D**

2. $(8-5p)(4q-3r)$
$= 32q - 24r - 20pq + 15pr$
$= 32q + 15pr - 24r - 20pq$

Jawapan / *Answer*: **C**

3. $(2m-3)^2 + 2(1+3m)$
$= 4m^2 - 6m - 6m + 9 + 2 + 6m$
$= 4m^2 - 6m + 11$

Jawapan / *Answer*: **C**

4. $3a^2 - 6a - 45$
$= 3(a^2 - 2a - 15)$
$= 3(a-5)(a^2+3)$

Jawapan / *Answer*: **A**

5. $\frac{1}{2}(2x)(2x+7)$
$= x(2x+7)$
$= 2x^2 + 7x$

Jawapan / *Answer*: **B**

Bahagian B

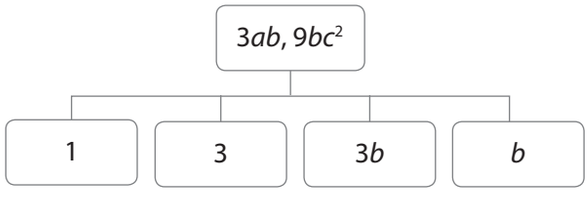
6.

$(g+h)^2$	$(g-h)(g+h)$
g^2-h^2	$(g-1)(g+1)$
g^2-1	$(g-h)(g-h)$
$g^2-2gh+h^2$	$g^2+2gh+h^2$

7.

$(c+d)(c-d) = c^2-d^2$	Betul / *True*
$(c-d)(c+d) = c^2+d^2$	Salah / *False*
$(c+d)^2 = c^2+2cd-d^2$	Salah / *False*
$(c-d)^2 = c^2-2cd+d^2$	Betul / *True*

8.



Bahagian C

9. (a) $2s^2 - 4s + 2$
$= 2(s^2 - 2s + 1)$
$= 2(s-1)(s-1)$

(b) (i) $16 - 25q^2$
$= 4^2 - 5^2q^2$
$= (4 - 5q)(4 + 5q)$

(ii) $20pq - 5pr + 12pq - 3pr$
$= 5p(4q - r) + 3p(4q - r)$
$= (4q - r)(5p + 3p)$
$= 8p(4q - r)$

(c) $\frac{(h-6)}{2h} - \frac{(j-4)}{6j}$
$= \frac{3hj - 18j - hj + 4h}{6hj}$
$= \frac{2hj - 18j + 4h}{6hj}$
$= \frac{2(hj - 9j + 2h)}{6hj}$
$= \frac{hj - 9j + 2h}{3hj}$

10. (a) (i) $\left(r - \frac{1}{4}\right)^2 - \frac{2}{7}r$
$= \left(r - \frac{1}{4}\right)\left(r - \frac{1}{4}\right) - \frac{2}{7}r$
$= r^2 - \frac{1}{2}r + \frac{1}{16} - \frac{2}{7}r$
$= r^2 - \frac{11}{14}r + \frac{1}{16}$

(ii) $\frac{9m^2 - 36}{m^2 - 4} \div \frac{3(m+2)}{m-2}$
$= \frac{9(m-2)(m+2)}{(m-2)(m+2)} \times \frac{m-2}{3(m+2)}$
$= \frac{9(m-2)}{3(m+2)}$
$= \frac{3(m-2)}{(m+2)}$

(b) $(5 + y)(4 - y)$
$= 20 - 5y + 4y - y^2$
$= 20 - y - y^2$

(c) Harga beg tangan (RM)
The price of handbag (RM)
$= \frac{5}{m+2} \times (m^2 - 4)$
$= \frac{5}{m+2} \times (m - 2)(m + 2)$
$= 5(m - 2)$

Harga kemeja (RM) / *The price of shirt* (RM)
$= \frac{m}{5} \times 5(m - 2)$
$= m(m - 2)$
$= m^2 - 2m$

Power KBAT

(a) Luas ladang lembu/ *Area of the cow farm*
= Luas *ABCD* – Luas *AFE* – Luas *CDE*
Area of ABCD – Area of AFE – Area of CDE
$= 56 \times 48 - \left[\frac{1}{2} \times 2x \times (48 - 2x)\right] - \left[\frac{1}{2} \times 48 \times (56 - 2x)\right]$
$= 2\,688 - x(48 - 2x) - 24(56 - 2x)$
$= 2\,688 - 48x + 2x^2 - 1\,344 + 48x$
$= (2x^2 + 1\,344)\ \text{m}^2$

(b) $EC^2 = ED^2 + DC^2$
$EC = \sqrt{(56 - 2x)^2 + 48^2}$
$= \sqrt{3\,136 - 224x + 4x^2 + 2\,304}$
$= \sqrt{4x^2 - 224x + 5\,440}$
$= \sqrt{4(x^2 - 56x + 1\,360}$
$= (2\sqrt{x^2 - 56x + 1\,360})\ \text{m}$

(c) Perimeter *ABCD*/ *Perimeter of ABCD*
$= 2(56) + 2(48)$
$= 208\ \text{m}$

Bilangan pagar yang diperlukan
Number of fences needed
$= \frac{208}{\left(\frac{6}{5y} + \frac{1}{2y}\right)}$
$= \frac{208}{\left(\frac{6 \times 2}{5y \times 2} + \frac{1 \times 5}{2y \times 5}\right)}$
$= \frac{208}{\left(\frac{17}{10y}\right)}$
$= 208 \times \frac{10y}{17}$
$= 122\frac{6}{17}y$