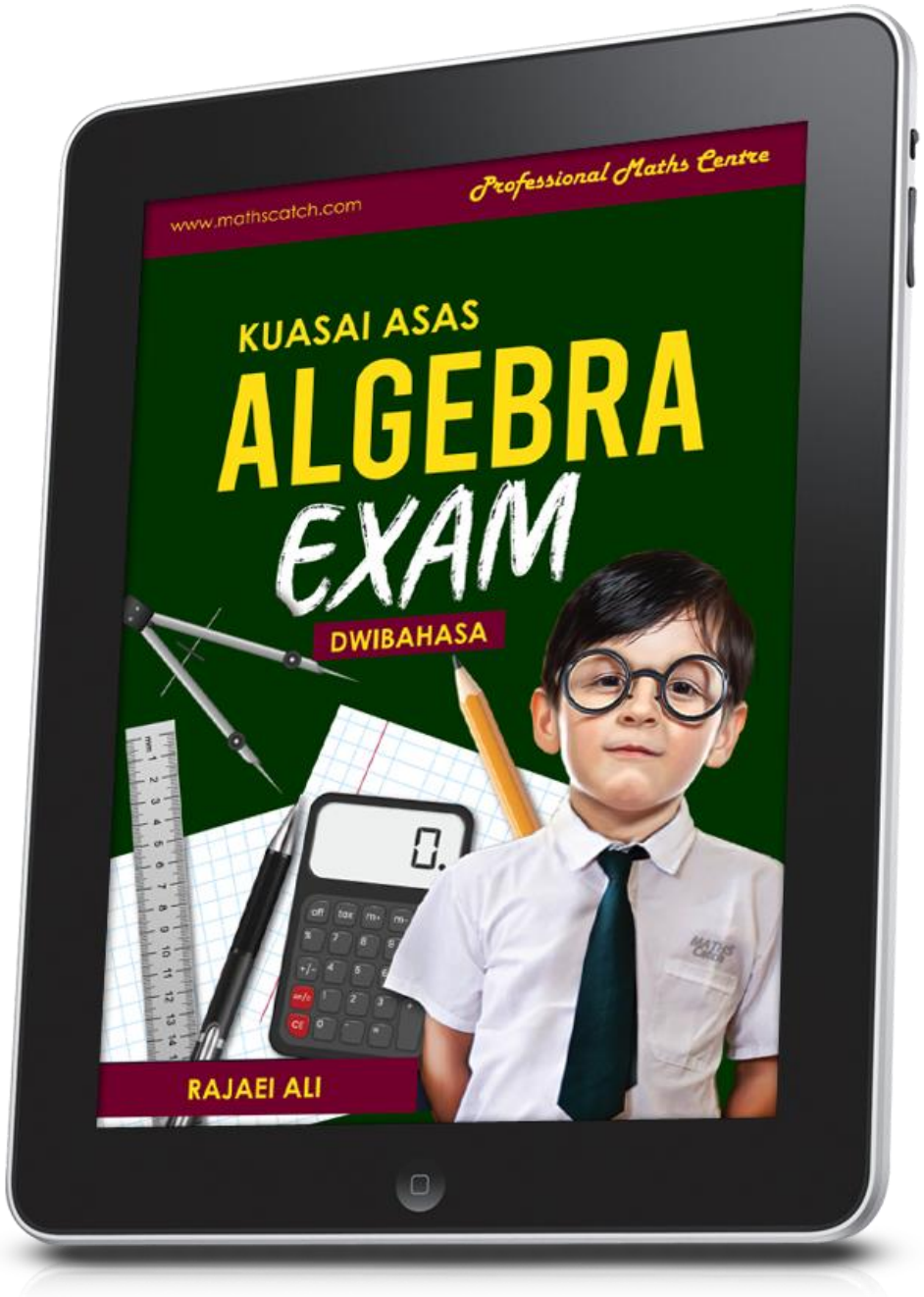
TINGKATAN 4,5



P/s: Modul Latihan asas ni sesuai untuk pelajar Tingkatan 4,5. Modul ini sebenarnya saya gunakan untuk bagi kepada pelajar-pelajar saya di Maths Catch Centre untuk tujuan saya mengesan kelemahan asas ALGEBRA matematik mereka dengan pantas.

Alang-alang dah buat saya share juga secara percuma kepada anda semua. Moga bermanfaat.

LATIHAN ASAS MATEMATIK ALGEBRA

ALGEBRA – UNGKAPAN
ALGEBRA – PERSAMAAN LINEAR
ALGEBRA - RUMUS

BACK TO BASIC - JSU

No		Topik	Markah	KBAT
1.	(a)	2.3.2: Pendaraban dan Pembahagian Dua atau Lebih Sebutan Algebra	3	
	(b)	2.3.3: Ungkapan Algebra	3	
	(c)	2.3.3: Ungkapan Algebra	3	
	(d)	2.3.3: Ungkapan Algebra	3	
2.	(a)	2.3.3: Ungkapan Algebra	3	
	(b)	2.3.3: Ungkapan Algebra	3	
	(c)	2.3.3: Ungkapan Algebra	3	
	(d)	2.3.4: Pengiraan yang Melibatkan Ungkapan Algebra	4	
3.	(a)	2.3.4: Pengiraan yang Melibatkan Ungkapan Algebra	3	
	(b)	2.3.4: Pengiraan yang Melibatkan Ungkapan Algebra	4	
	(c)	2.3.4: Pengiraan yang Melibatkan Ungkapan Algebra	4	
	(d)	2.3.4: Pengiraan yang Melibatkan Ungkapan Algebra	4	
4.	(a)	2.4.3: Penyelesaian Persamaan Linear dalam Satu Anu	4	
	(b)	2.4.3: Penyelesaian Persamaan Linear dalam Satu Anu	4	
5.	(a)	2.4.3: Penyelesaian Persamaan Linear dalam Satu Anu	3	
	(b)	2.4.3: Penyelesaian Persamaan Linear dalam Satu Anu	3	
	(c)	2.4.3: Penyelesaian Persamaan Linear dalam Satu Anu	3	
	(d)	2.4.3: Penyelesaian Persamaan Linear dalam Satu Anu	3	
6.	(a)	2.4.3: Penyelesaian Persamaan Linear dalam Satu Anu	3	
	(b)	2.4.3: Penyelesaian Persamaan Linear dalam Satu Anu	4	
	(c)	2.4.3: Penyelesaian Persamaan Linear dalam Satu Anu	4	
	(d)	2.4.3: Penyelesaian Persamaan Linear dalam Satu Anu	3	
	(e)	2.4.3: Penyelesaian Persamaan Linear dalam Satu Anu	4	
7.	(a)	2.4.3: Penyelesaian Persamaan Linear dalam Satu Anu	4	
	(b)	2.4.3: Penyelesaian Persamaan Linear dalam Satu Anu	4	
8.	(a)	3.7.2: Rumus-rumus	3	
	(b)	3.7.2: Rumus-rumus	3	
	(c)	3.7.2: Rumus-rumus	3	
	(d)	3.7.2: Rumus-rumus	3	
9.	(a)	3.7.2: Rumus-rumus	3	
	(b)	3.7.2: Rumus-rumus	3	
	(c)	3.7.2: Rumus-rumus	3	
	(d)	3.7.2: Rumus-rumus	3	
10.	(a)	3.7.2: Rumus-rumus	3	
	(b)	3.7.2: Rumus-rumus	3	
	(c)	3.7.2: Rumus-rumus	3	
	(d)	3.7.2: Rumus-rumus	3	
11.	(a)	3.7.2: Rumus-rumus	3	
	(b)	3.7.2: Rumus-rumus	3	
	(c)	3.7.2: Rumus-rumus	4	
		JUMLAH	132	

SOALAN / QUESTIONS 1

1. (a) Permudahkan $\frac{(-2x^5z)(6xy)}{-6xyz}$.

Simplify $\frac{(-2x^5z)(6xy)}{-6xyz}$. Jawapan/*Answer:*

(b) Diberi $s = 4$ dan $t = -5$, hitung nilai $\frac{6s + 6t^2}{7}$.

Given that $s = 4$ *and* $t = -5$, *calculate the value of* $\frac{6s + 6t^2}{7}$. Jawapan/*Answer:*

(c) Diberi $x = \frac{2}{3}$ dan $y = 3$, hitung nilai $-2x(6y - 10)^3$.

Given that $x = \frac{2}{3}$ *and* $y = 3$, *calculate the value of* $-2x(6y - 10)^3$. Jawapan/*Answer:*

(d) Diberi $m = 3$ dan $n = -3$, hitung nilai $-10m^2 + 5n^2$.
Given that $m = 3$ *and* $n = -3$, *calculate the value of* $-10m^2 + 5n^2$. Jawapan/*Answer:*

SOALAN / QUESTIONS 2

2. (a) Diberi $m = 4$ dan $n = 4$, hitung nilai $\frac{-7m}{8n} - (-2n)^3$.

Given that $m = 4$ *and* $n = 4$, *calculate the value of* $\frac{-7m}{8n} - (-2n)^3$. Jawapan/*Answer:*

(b) Diberi $x = -3$ dan $y = 1$, hitung nilai $\frac{3x^2 + 3y^3}{2x - 2y}$.

Given that $x = -3$ *and* $y = 1$, *calculate the value of* $\frac{3x^2 + 3y^3}{2x - 2y}$. Jawapan/*Answer:*

(c) Permudahkan $-10p + 3q + 4p + 10q$.
Simplify $-10p + 3q + 4p + 10q$.
Jawapan/*Answer:*

(d) Permudahkan setiap yang berikut.
Simplify each of the following.
(i) $4p + 9p(-3 + 3q) + 9pq$
(ii) $(4x^3 + 4xy) \div 6$

Jawapan/*Answer:*

SOALAN / QUESTIONS 3

3. (a) Permudahkan $\frac{10m - 9(-6m - 9)}{2} - 6$.

Simplify $\frac{10m - 9(-6m - 9)}{2} - 6$. Jawapan/*Answer:*

(b) Permudahkan setiap yang berikut.
Simplify each of the following.
(i) $7(3m - 7)$
(ii) $(12x^3 + 20xy + 12) \div 4$

Jawapan/*Answer:*

(c) Ringkaskan:
Simplify:
(i) $2x - (y + 2x)$
(ii) $\frac{12x \times 5yz}{3xy}$

Jawapan/*Answer:*

(d) Permudahkan ungkapan yang berikut.
Simplify each of the following expression.
(i) $\frac{-20m - 8}{4}$
(ii) $\frac{4x - 1}{16x^2 - 1}$

Jawapan/*Answer:*

SOALAN / QUESTIONS 4

4. (a) Selesaikan setiap persamaan berikut.
Solve each of the following equations.

(i) $\frac{3p}{4} = 3$

(ii) $9(q - 1) = 7q + 5$

Jawapan/*Answer:*

(b) Selesaikan persamaan-persamaan berikut.
Solve the following equations.

(i) $x = 4x - 6$

(ii) $5y = \frac{6 - 7y}{7}$

Jawapan/*Answer:*

SOALAN / QUESTIONS 5

5. (a) Diberi $3q = 84 - 3q$, cari nilai bagi q.
Given that $3q = 84 - 3q$, *find the value of* q.

Jawapan/*Answer:*

(b) Diberi $6b - 6 = 8b + 5$, cari nilai bagi b.
Given that $6b - 6 = 8b + 5$, *find the value of* b.

Jawapan/*Answer:*

(c) Diberi $\frac{9x + 6}{5} = 6$, cari nilai bagi x.
Given that $\frac{9x + 6}{5} = 6$, *find the value of* x.

Jawapan/*Answer:*

(d) Diberi $5m - 86 = 7m$, cari nilai bagi m.
Given that $5m - 86 = 7m$, *find the value of* m.

Jawapan/*Answer:*

SOALAN / QUESTIONS 6

6. (a) Diberi $2(p + 1) + p - 81 = 2p$, cari nilai bagi p.
Given that $2(p + 1) + p - 81 = 2p$, *find the value of* p.

Jawapan/*Answer:*

(b) Tentukan sama ada berikut merupakan penyelesaian bagi $8q + 12 = 68$.
Determine whether the following is the solution of $8q + 12 = 68$.
(i) 7
(ii) 3

Jawapan/*Answer:*

(c) Selesaikan persamaan berikut.
Solve the following equations.
(i) $m + 6 = 17$
(ii) $m - 2 = 18$
(iii) $7m = 35$
(iv) $\frac{m}{2} = 1$

Jawapan/*Answer:*

(d) Selesaikan setiap persamaan linear berikut:
Solve each of the following linear equations:
(i) $\frac{q}{10} = -3$
(ii) $8(5d + 6) = 3d$

Jawapan/*Answer:*

(e) Selesaikan setiap persamaan linear berikut:
Solve each of the following linear equations:
(i) $q - 5 = -2$
(ii) $\frac{3m - 1}{4} = 3m$

Jawapan/*Answer:*

SOALAN / QUESTIONS 7

7. (a) Selesaikan setiap persamaan linear berikut:
Solve each of the following linear equations:

(i) $7 - x = 8$

(ii) $\frac{x}{2} - 5 = 11$

Jawapan/*Answer:*

(b) Selesaikan setiap persamaan berikut.
Solve each of the following equations.

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

(ii) $7(3n - 5) = n + 3$

Jawapan/*Answer:*

SOALAN / QUESTIONS 8

8. (a) Diberi $\frac{3(7p - 3q)}{q + 1} = 6$, nyatakan p dalam sebutan q.
Given that $\frac{3(7p - 3q)}{q + 1} = 6$, *express p in terms of q.*

Jawapan/*Answer:*

(b) Diberi $\frac{7p - 6}{4p + q} = 5$, nyatakan p dalam sebutan q.
Given that $\frac{7p - 6}{4p + q} = 5$, *express p in terms of q.*

Jawapan/*Answer:*

(c) Diberi $p = \frac{q - 2pr}{2}$, nyatakan p dalam sebutan q dan r.
Given that $p = \frac{q - 2pr}{2}$, *express p in terms of q and r.*

Jawapan/*Answer:*

(d) Diberi $49p^2 + 6 = 6q$, nyatakan p dalam sebutan q.
Given that $49p^2 + 6 = 6q$, *express p in terms of q.*

Jawapan/*Answer:*

SOALAN / QUESTIONS 9

9. (a) Jika $z = \frac{7y - 6x^2}{9x}$, maka cari nilai y apabila $x = 8$ dan $z = 9$.

If $z = \frac{7y - 6x^2}{9x}$, *then find the value of* y *when* $x = 8$ *and* $z = 9$.

Jawapan/*Answer:*

(b) Diberi $2s = \frac{3t(4s + 5)}{2t - 3}$, nyatakan s dalam sebutan t.

Given that $2s = \frac{3t(4s + 5)}{2t - 3}$, *express* s *in terms of* t.

Jawapan/*Answer:*

(c) Diberi $B = \frac{4w(3x - 5y)}{5z}$, nyatakan x dalam sebutan B, w, y dan z.

Given that $B = \frac{4w(3x - 5y)}{5z}$, *express* x *in terms of* B, w, y *and* z.

Jawapan/*Answer:*

(d) Diberi $2s = \frac{3t}{\sqrt{3u}}$, nyatakan u dalam sebutan s dan t.

Given that $2s = \frac{3t}{\sqrt{3u}}$, *express* u *in terms of* s *and* t.

Jawapan/*Answer:*

SOALAN / QUESTIONS 10

10. (a) Diberi $3a - 7 = \frac{2b}{c^2}$, cari nilai bagi a jika $b = 4$ dan $c = 2$.

Given that $3a - 7 = \frac{2b}{c^2}$, *find the value of* a *if* $b = 4$ *and* $c = 2$.

Jawapan/*Answer:*

(b) Diberi $N = \frac{4x + 4x^3}{7}$, cari nilai bagi N jika $x = 4$.

Given that $N = \frac{4x + 4x^3}{7}$, *find the value of* N *if* $x = 4$.

Jawapan/*Answer:*

(c) Diberi $5s = 3st + 4$, nyatakan t dalam sebutan s.
Given that $5s = 3st + 4$, *express* t *in terms of* s.

Jawapan/*Answer:*

(d) Diberi $\frac{\sqrt{2s + 3t}}{3} = u$, nyatakan t dalam sebutan u dan s.

Given that $\frac{\sqrt{2s + 3t}}{3} = u$, *express* t *in terms of* u *and* s.

Jawapan/*Answer:*

SOALAN / QUESTIONS 11

11. (a) Diberi $\frac{h^2 - 7}{3} = n$, nyatakan h dalam sebutan n.

Given $\frac{h^2 - 7}{3} = n$, *express h in terms of n.*

Jawapan/*Answer:*

(b) Diberi $\frac{\sqrt{2s + 3t}}{2} = u$.

Given $\frac{\sqrt{2s + 3t}}{2} = u$.

(i) Ungkapkan t dalam sebutan u dan s,
Express t in terms of u and s,

(ii) Hitungkan nilai t jika $u = 5$ dan $s = 5$.
Calculate the value of t if u = 5 and s = 5.

Jawapan/*Answer:*

(c) Diberi $\frac{2(p - q)}{4q + 3} = 2$.

Given $\frac{2(p - q)}{4q + 3} = 2$.

(i) Ungkapkan p dalam sebutan q,
Express p in terms of q,

(ii) Cari nilai q jika $p = 5$.
Find the value of q if p = 5.

Jawapan/*Answer:*

SKEMA JAWAPAN

1. (a) $\frac{(-2x^5z)(6xy)}{-6xyz}$
$= \frac{-2 \times x \times x \times x \times x \times x \times z \times 6 \times x \times y}{-6 \times x \times y \times z}$
$= 2x^5$

(b) $\frac{6s + 6t^2}{7}$
$= \frac{6(4) + 6(-5)^2}{7}$
$= \frac{24 + 150}{7}$
$= 24\frac{6}{7}$

(c) $-2x(6y - 10)^3$
$= -2(\frac{2}{3})(6(3) - 10)^3$
$= -\frac{4}{3}(18 - 10)^3$
$= -\frac{4}{3}(8)^3$
$= -\frac{4}{3} \times 512$
$= -682\frac{2}{3}$

(d) $-10m^2 + 5n^2$
$= -10(3)^2 + 5(-3)^2$
$= -10(9) + 5(9)$
$= -90 + 45$
$= -45$

2. (a) $\frac{-7m}{8n} - (-2n)^3$
$= \frac{-7(4)}{8(4)} - (-2(4))^3$
$= \frac{-28}{32} - (-8)^3$
$= -\frac{28}{32} + 512$
$= 511\frac{1}{8}$

(b) $\frac{3x^2 + 3y^3}{2x - 2y}$
$= \frac{3(-3)^2 + 3(1)^3}{2(-3) - 2(1)}$
$= \frac{3(9) + 3(1)}{2(-3) - 2(1)}$
$= \frac{27 + 3}{-6 - 2}$
$= -3\frac{3}{4}$

(c) $-10p + 4p + 3q + 10q$
$= -6p + 13q$

(d) (i) $4p + 9p(-3 + 3q) + 9pq$
$= 4p + (-27p + 27pq) + 9pq$
$= 4p - 27p + 27pq + 9pq$
$= -23p + 36pq$

(ii) $\frac{4x^3 + 4xy}{6}$
$= \frac{2x^3 + 2xy}{3}$

3. (a) $\frac{10m - 9(-6m - 9)}{2} - 6$
$= \frac{10m - (-54m - 81)}{2} - 6$
$= \frac{64m + 81}{2} - 6$
$= \frac{64m + 81}{2} - \frac{12}{2}$
$= \frac{64m + 69}{2}$

(b) (i) $7(3m - 7)$
$= 7 \times 3m - 7 \times 7$
$= 21m - 49$

(ii) $(12x^3 + 20xy + 12) \div 4$
$= \frac{12x^3}{4} + \frac{20xy}{4} + \frac{12}{4}$
$= 3x^3 + 5xy + 3$

(c) (i) $2x - (y + 2x)$
$= 2x - y - 2x$
$= -y$

(ii) $\frac{12x \times 5yz}{3xy}$
$= 20z$

(d) (i) $\frac{-20m - 8}{4}$
$= -5m - 2$

(ii) $\frac{4x - 1}{16x^2 - 1}$
$= \frac{4x - 1}{(4x - 1)(4x + 1)}$
$= \frac{1}{4x + 1}$

4. (a) (i) $\frac{3p}{4} = 3$
$3p = 3 \times 4$
$p = \frac{12}{3}$
$p = 4$

(ii) $9(q - 1) = 7q + 5$
$9q - 9 = 7q + 5$
$9q - 7q = 5 + 9$
$2q = 14$
$q = \frac{14}{2}$
$q = 7$

(b) (i) $x = 4x - 6$
$4x - x = 6$
$3x = 6$
$x = \frac{6}{3}$
$x = 2$

(ii) $5y = \frac{6 - 7y}{7}$
$35y = 6 - 7y$
$35y + 7y = 6$
$42y = 6$
$y = \frac{6}{42}$
$y = \frac{1}{7}$

5. (a) $3q = 84 - 3q$
$3q + 3q = 84$
$6q = 84$

$q = \frac{84}{6}$

$q = 14$

(b) $6b - 6 = 8b + 5$
$6b - 8b = 5 + 6$
$-2b = 11$
$b = -\frac{11}{2}$

(c) $\frac{9x + 6}{5} = 6$
$9x + 6 = 30$
$9x = 30 - 6$
$9x = 24$
$x = \frac{24}{9}$
$x = \frac{8}{3}$

(d) $5m - 86 = 7m$
$5m - 7m = 86$
$-2m = 86$
$m = -43$

6. (a) $2(p + 1) + p - 81 = 2p$
$2p + 2 + p - 81 = 2p$
$2p + p - 2p = 79$
$p = 79$

(b) (i) LHS
$= 8q + 12$
$= 8(7) + 12$
$= 56 + 12$
$= 68$

RHS = 68
$68 = 68$
$\therefore$ LHS = RHS

(ii) LHS
$= 8q + 12$
$= 8(3) + 12$
$= 24 + 12$
$= 36$

RHS = 68
$36 \neq 68$
$\therefore$ LHS $\neq$ RHS

(c) (i) $m + 6 = 17$
$m + 6 - 6 = 17 - 6$
$m = 11$

(ii) $m - 2 = 18$
$m - 2 + 2 = 18 + 2$
$m = 20$

(iii) $7m = 35$
$\frac{7m}{7} = \frac{35}{7}$
$m = 5$

(iv) $\frac{m}{2} = 1$
$\frac{m}{2} \times 2 = 1 \times 2$
$m = 2$

(d) (i) $\frac{q}{10} = -3$
$q = (-3) \times 10$
$q = -30$

(ii) $8(5d + 6) = 3d$
$40d + 48 = 3d$
$40d - 3d = -48$
$37d = -48$
$d = -\frac{48}{37}$

(e) (i) $q - 5 = -2$
$q = -2 + 5 = 3$

(ii) $\frac{3m - 1}{4} = 3m$
$3m - 1 = 12m$
$3m - 12m = 1$
$-9m = 1$
$m = -\frac{1}{9}$

7. (a) (i) $7 - x = 8$
$7 - 8 = x$
$x = -1$

(ii) $\frac{x}{2} - 5 = 11$
$\frac{x}{2} = 16$
$x = 16 \times \frac{2}{1}$
$x = 32$

(b) (i) $\frac{2m}{3} = 3$
$2m = 3 \times 3$
$m = \frac{9}{2}$

(ii) $7(3n - 5) = n + 3$
$21n - 35 = n + 3$
$21n - n = 3 + 35$
$20n = 38$
$n = \frac{38}{20}$
$n = \frac{19}{10}$

8. (a) $\frac{3(7p - 3q)}{q + 1} = 6$
$3(7p - 3q) = 6(q + 1)$
$21p - 9q = 6q + 6$
$21p = 6q + 9q + 6$
$21p = 15q + 6$
$p = \frac{15q + 6}{21}$
$p = \frac{5q + 2}{7}$

(b) $\frac{7p - 6}{4p + q} = 5$
$7p - 6 = 5(4p + q)$
$7p - 6 = 20p + 5q$
$7p - 20p = 5q + 6$
$-13p = 5q + 6$
$p = -\frac{5q + 6}{13}$

(c) $p = \frac{q - 2pr}{2}$
$2p = q - 2pr$
$2p + 2pr = q$
$p(2 + 2r) = q$
$p = \frac{q}{2 + 2r}$

(d) $49p^2 + 6 = 6q$
$49p^2 = 6q - 6$
$p^2 = \frac{6q - 6}{49}$

$p = \frac{\sqrt{6q - 6}}{7}$

9. (a) $x = 8; z = 9$

$1(9) = \frac{7y - 6(8)^2}{9(8)}$

$9 = \frac{7y - 384}{72}$

$9(72) = 7y - 384$

$648 = 7y - 384$

$7y = 648 + 384$

$7y = 1\ 032$

$y = \frac{1\ 032}{7}$

(b) $2s = \frac{3t(4s + 5)}{2t - 3}$

$2s(2t - 3) = 3t(4s + 5)$

$4st - 6s = 12st + 15t$

$4st - 6s - 12st = 15t$

$-8st - 6s = 15t$

$s(-8t - 6) = 15t$

$s = \frac{15t}{-8t - 6}$

(c) $B = \frac{4w(3x - 5y)}{5z}$

$5Bz = 4w(3x - 5y)$

$\frac{5Bz}{4w} = 3x - 5y$

$\frac{5Bz}{4w} + 5y = 3x$

$3x = \frac{5Bz + 20wy}{4w}$

$x = \frac{5Bz + 20wy}{12w}$

(d) $2s = \frac{3t}{\sqrt{3u}}$

$2s(\sqrt{3u}) = 3t$

$\sqrt{3u} = \frac{3t}{2s}$

$3u = \frac{9t^2}{4s^2}$

$u = \frac{9t^2}{12s^2}$

$u = \frac{3t^2}{4s^2}$

10. (a) $3a - 7 = \frac{2b}{c^2}$

$3a - 7 = \frac{2(4)}{2^2}$

$3a - 7 = \frac{8}{4}$

$3a - 7 = 2$

$3a = 2 + 7$

$3a = 9$

$a = 3$

(b) $N = \frac{4x + 4x^3}{7}$

$N = \frac{4(4) + 4(4)^3}{7}$

$N = \frac{272}{7}$

(c) $5s = 3st + 4$

$3st = 5s - 4$

$t = \frac{5s - 4}{3s}$

(d) $\frac{\sqrt{2s + 3t}}{3} = u$

$\sqrt{2s + 3t} = 3u$

$(\sqrt{2s + 3t})^2 = (3u)^2$

$2s + 3t = 9u^2$

$3t = 9u^2 - 2s$

$t = \frac{9u^2 - 2s}{3}$

11. (a) $\frac{h^2 - 7}{3} = n$

$h^2 - 7 = 3n$

$h^2 = 3n + 7$

$h = \sqrt{3n + 7}$

(b) (i) $\frac{\sqrt{2s + 3t}}{2} = u$

$\sqrt{2s + 3t} = 2u$

$(\sqrt{2s + 3t})^2 = (2u)^2$

$2s + 3t = 4u^2$

$3t = 4u^2 - 2s$

$3t = 2(2u^2 - s)$

$t = \frac{2(2u^2 - s)}{3}$

(ii) $t = \frac{2(2u^2 - s)}{3}$

$t = \frac{2(2(5)^2 - (5))}{3}$

$t = 30$

(c) (i) $\frac{2(p - q)}{4q + 3} = 2$

$2(p - q) = 2(4q + 3)$

$2p - 2q = 8q + 6$

$2p = 8q + 2q + 6$

$2p = 10q + 6$

$p = \frac{10q + 6}{2}$

$p = 5q + 3$

(ii) $p = 5q + 3$

$5 = 5q + 3$

$5 - 3 = 5q$

$q = \frac{2}{5}$