INTENSIF ASAS

TINGKATAN 1,2,3

MATEMATIK

BAB	TOPIK
1	**POLA DAN JUJUKAN** Bahagian 1 Bahagian 2 Bahagian 3
2	**PEMFAKTORAN & PECAHAN ALGEBRA** Bahagian 1 Bahagian 2
3	**RUMUS ALGEBRA** Bahagian 1 Bahagian 2

Professional Maths Centre™

MATHS CATCH

Dwibahasa

LEBIH DARI **328 SOALAN** TERPILIH BERTARAF PEPERIKSAAN DAN BERKUALITI TINGGI DAN SANGAT SESUAI UNTUK KEGUNAAN PELAJAR TINGKATAN 2 SEBAGAI LATIHAN ASAS SEMPENA CUTI SEKOLAH

BAB 1: POLA & JUJUKAN

(A) URUTAN & POLA NOMBOR

→ ***nombor berpola***

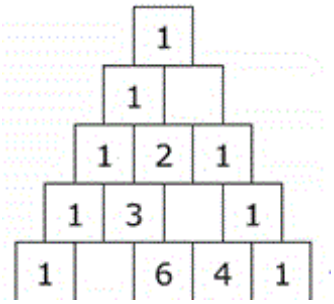
Ganji	1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, . . .
Genap	2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, . . .

BAHAGIAN 1

1. Lengkapkan Nombor-nombor berikut yang merupakan sebahagian daripada Nombor Fibonacci

0,1,_____,2,3,_____,8,_____

2. Isi Nombor-nombor dalam kotak kosong bagi Segi Tiga Pascal yang berikut .



BAHAGIAN 2

INPUT	OUTPUT
1 List two more numbers for each of the following number sequences: *Senaraikan dua nombor seterusnya untuk urutan nombor berikut:* (a) 70, 71, 73, 76, ____, ____ (b) 57, 55, 52, 48, ____, ____ [3 marks] *[3 markah]* Answer: *Jawapan:*	**1** List two more numbers for each of the following number sequences: *Senaraikan dua nombor seterusnya untuk urutan nombor berikut:* (a) -7, -16, -25, -34, ____, ____ (b) 5, 6, 8, 11, ____, ____ [3 marks] *[3 markah]* Answer: *Jawapan:*
2 Diagram 1 shows a number sequence. *Rajah 1 menunjukkan satu urutan nombor.* 89, *m*, 75, 68, *n*, 54, 47 **Diagram 1** ***Rajah 1*** Based on Diagram 1, what is the sum of *m* and *n*? *Berdasarkan Rajah 1, apakah hasil tambah m dan n?* [3 marks] *[3 markah]* Answer: *Jawapan:*	**2** Diagram 1 shows a number sequence. *Rajah 1 menunjukkan satu urutan nombor.* *x*, 111, 108, 104, 99, *y*, 86 **Diagram 1** ***Rajah 1*** Based on Diagram 1, what is the sum of *x* and *y*? *Berdasarkan Rajah 1, apakah hasil tambah x dan y?* [3 marks] *[3 markah]* Answer: *Jawapan:*
3 Diagram 1 shows a number sequence. *Rajah 1 menunjukkan satu urutan nombor.* 17, 19, 22, 26, 31, *s*, *t* **Diagram 1** ***Rajah 1*** What is the value of *s* and *t*? *Berapakah nilai s dan t?* [3 marks] *[3 markah]* Answer: *Jawapan:*	**3** Diagram 2 shows a number sequence. *Rajah 2 menunjukkan satu urutan nombor.* 129, *s*, *t*, 114, 109, 104, 99 **Diagram 2** ***Rajah 2*** What is the value of *s* and *t*? *Berapakah nilai s dan t?* [3 marks] *[3 markah]* Answer: *Jawapan:*

4 The sum of three consecutive odd numbers is 81. What are the three numbers? *Jumlah tiga nombor ganjil yang berturutan ialah 81. Berapakah tiga nombor itu?* [3 marks] *[3 markah]* Answer: *Jawapan:*	**4** The sum of three consecutive odd numbers is 105. What are the three numbers? *Jumlah tiga nombor ganjil yang berturutan ialah 105. Berapakah tiga nombor itu?* [3 marks] *[3 markah]* Answer: *Jawapan:*
5 The sum of three consecutive even numbers is 210. What are the three numbers? *Jumlah tiga nombor genap yang berturutan ialah 210. Berapakah tiga nombor itu?* [3 marks] *[3 markah]* Answer: *Jawapan:*	**5** The sum of three consecutive even numbers is 108. What are the three numbers? *Jumlah tiga nombor genap yang berturutan ialah 108. Berapakah tiga nombor itu?* [3 marks] *[3 markah]* Answer: *Jawapan:*
6 (a) The sum of two consecutive even numbers is 26. What are the two numbers? *Jumlah dua nombor genap yang berturutan ialah 26. Berapakah dua nombor itu?* (b) How many odd numbers between 42 and 70 are divisible by 7? *Berapakah bilangan nombor ganjil antara 42 dan 70 yang boleh dibahagikan dengan 7?* [3 marks] *[3 markah]* Answer: *Jawapan:*	**6** (a) The sum of two consecutive even numbers is 34. What are the two numbers? *Jumlah dua nombor genap yang berturutan ialah 34. Berapakah dua nombor itu?* (b) How many odd numbers between 38 and 58 are divisible by 3? *Berapakah bilangan nombor ganjil antara 38 dan 58 yang boleh dibahagikan dengan 3?* [3 marks] *[3 markah]* Answer: *Jawapan:*
7 (a) The sum of an even number and an odd number is an _____ number. *Hasil tambah satu nombor genap dan satu nombor ganjil ialah satu nombor _____.* (b) The difference between two even numbers is an _____ number. *Beza antara dua nombor genap ialah satu nombor _____.* [3 marks] *[3 markah]* Answer: *Jawapan:*	**7** (a) The sum of an even number and an odd number is an _____ number. *Hasil tambah satu nombor genap dan satu nombor ganjil ialah satu nombor _____.* (b) The difference between two even numbers is an _____ number. *Beza antara dua nombor genap ialah satu nombor _____.* [3 marks] *[3 markah]* Answer: *Jawapan:*

BAHAGIAN 3 :

INPUT	OUTPUT
1 Which of the following is a number sequence? *Antara yang berikut, yang manakah satu urutan nombor?* **A** 96, 101, 106, 111, 117, ... **B** 162, 162, 159, 156, 152, ... **C** 168, 163, 158, 153, 148, ... **D** 54, 56, 59, 64, 68, ...	**1** Which of the following is a number sequence? *Antara yang berikut, yang manakah satu urutan nombor?* **A** 113, 110, 105, 101, 97, ... **B** 78, 81, 85, 90, 95, ... **C** 99, 106, 115, 123, 131, ... **D** 114, 112, 109, 105, 100, ...
2 Which of the following is **not** a number sequence? *Antara yang berikut, yang manakah **bukan** satu urutan nombor?* **A** 32, 33, 35, 38, 42, ... **B** 65, 74, 83, 92, 101, ... **C** 184, 181, 177, 172, 166, ... **D** 150, 145, 140, 134, 130, ...	**2** Which of the following is **not** a number sequence? *Antara yang berikut, yang manakah **bukan** satu urutan nombor?* **A** 29, 30, 32, 35, 39, ... **B** 191, 188, 185, 182, 178, ... **C** 21, 25, 29, 33, 37, ... **D** 144, 143, 141, 138, 134, ...
3 Diagram 1 shows a number sequence. *Rajah 1 menunjukkan satu urutan nombor.* 106, 116, 127, 139, 152, s, t, ... **Diagram 1** ***Rajah 1*** What is the value of s and t? *Apakah nilai s dan t?* **A** $s = 165$, $t = 181$ **C** $s = 166$, $t = 182$ **B** $s = 166$, $t = 181$ **D** $s = 167$, $t = 181$	**3** Diagram 1 shows a number sequence. *Rajah 1 menunjukkan satu urutan nombor.* 161, 154, 148, 143, 139, x, y, ... **Diagram 1** ***Rajah 1*** What is the value of x and y? *Apakah nilai x dan y?* **A** $x = 136$, $y = 134$ **C** $x = 137$, $y = 134$ **B** $x = 136$, $y = 135$ **D** $x = 137$, $y = 135$

4 Diagram 3 shows a number sequence.
Rajah 3 menunjukkan satu urutan nombor.

−7, 1, 10, 20, 31, *m*, 56, ...

Diagram 3
Rajah 3

What is the value of *m*?
Apakah nilai m?

A 43 **C** 45
B 44 **D** 46

4 Diagram 2 shows a number sequence.
Rajah 2 menunjukkan satu urutan nombor.

−8, 0, 10, 22, 36, *m*, 70, ...

Diagram 2
Rajah 2

What is the value of *m*?
Apakah nilai m?

A 50 **C** 52
B 51 **D** 53

5 Find the sum of all odd numbers between 70 and 74.
Hitungkan jumlah semua nombor ganjil antara 70 dan 74.

A 144 **C** 146
B 145 **D** 217

5 Find the sum of all odd numbers between 46 and 50.
Hitungkan jumlah semua nombor ganjil antara 46 dan 50.

A 94 **C** 97
B 96 **D** 145

6 Find the sum of all even numbers between 69 and 73.
Hitungkan jumlah semua nombor genap antara 69 dan 73.

A 141 **C** 144
B 142 **D** 214

6 Find the sum of all even numbers between 19 and 23.
Hitungkan jumlah semua nombor genap antara 19 dan 23.

A 41 **C** 43
B 42 **D** 64

7 Find the product of all odd numbers between 34 and 38.
Hitungkan hasil darab untuk semua nombor ganjil antara 34 dan 38.

A 1 224 **C** 1 295
B 1 258 **D** 1 369

7 Find the product of all odd numbers between 24 and 28.
Hitungkan hasil darab untuk semua nombor ganjil antara 24 dan 28.

A 675 **C** 729
B 700 **D** 18 225

8 Find the product of all even numbers between 29 and 33. *Hitungkan hasil darab untuk semua nombor genap antara 29 dan 33.* **A** 960 **C** 1 024 **B** 990 **D** 30 720	**8** Find the product of all even numbers between 45 and 49. *Hitungkan hasil darab untuk semua nombor genap antara 45 dan 49.* **A** 2 160 **C** 2 304 **B** 2 208 **D** 105 984
9 How many odd numbers between 48 and 68 are divisible by 9? *Berapakah nombor ganjil antara 48 dan 68 yang dapat dibahagikan dengan 9?* **A** 1 **C** 3 **B** 2 **D** 4	**9** How many odd numbers between 66 and 98 are divisible by 5? *Berapakah nombor ganjil antara 66 dan 98 yang dapat dibahagikan dengan 5?* **A** 3 **C** 5 **B** 4 **D** 6
10 How many even numbers between 33 and 57 are divisible by 4? *Berapakah nombor genap antara 33 dan 57 yang dapat dibahagikan dengan 4?* **A** 5 **C** 7 **B** 6 **D** 8	**10** How many even numbers between 29 and 67 are divisible by 5? *Berapakah nombor genap antara 29 dan 67 yang dapat dibahagikan dengan 5?* **A** 4 **C** 6 **B** 5 **D** 7

BAB 2: PEMFAKTORAN & PECAHAN ALGEBRA

(B) UNGKAPAN ALGEBRA

→ ***pembolehubah, objek***

- Sebanyak T orang kanak-kanak telah mengunjungi zoo H pada hari Ahad → pembolehubah, $\boldsymbol{T}$ / objek, $\boldsymbol{H}$

→ ***sebutan algebra*** *~ hasil darab suatu nombor dengan pembolehubah*

- $8k$ → pekali = **8** / pembolehubah = $\boldsymbol{k}$
- $\frac{t}{3}$ → pekali = $\frac{1}{3}$ / pembolehubah = $\boldsymbol{t}$
- $-dc^2$ → pekali = **–1** / pembolehubah = $\boldsymbol{d}$, $\boldsymbol{c}$

→ ***sebutan serupa, sebutan tak serupa***

sebutan serupa	***sebutan tak serupa***
$5h,\ -h,\ \frac{h}{7},\ \frac{2}{9}h$ @ $xy,\ \frac{2}{3}xy,\ \frac{yx}{5},\ -yx$	$6g,\ -3g^2,\ \frac{5}{g},\ \frac{3}{7}k,\ p$ @ $2abc,\ -4bcd,\ \frac{2}{5}def$

→ ***ungkapan algebra***
(terdiri daripada satu sebutan algebra @ gabungan sebutan algebra dan nombor dengan operasi + atau / dan –)

ungkapan algebra	***bilangan sebutan***	***Bilangan pembolehubah***	***pembolehuhah***
$3x - 2$	2	1	x
$5 - 3c + 9q$	3	2	$c,\ q$
$-2xy + 4abc + 3$	3	5	$x,\ y,\ a,\ b,\ c$
$6 + 3y^2 + y - 11$	4	1	y

→ ***kembang***

- Permudahakan : $2(n + 5) - 3$
  $= 2n + 10 - 3$
  $= 2n + 7$

- Permudahkan : $2p - 3q - (p + 5q)$
  $= 2p - 3q - p - 5q$
  $= p - 8q$

- Permudahkan : $(3p - m)(p + 2m)$
  $= 3p^2 + 6mp - mp - 2m^2$
  $= 3p^2 + 5mp - 2m^2$

- Permudahkan $(3x - 1)^2 - (7x + 4)$
  $= (3x - 1)(3x - 1) - 7x - 4$
  $= 9x^2 - 3x - 3x + 1 - 7x - 4$
  $= 9x^2 - 13x - 4$

→ ***faktor ~ 1***

- Faktor selengkapnya : $\overset{(\boldsymbol{p})}{p^2 - mp}$
  $= p(p - m)$

- Faktor selengkapnya : $\overset{(\boldsymbol{4e})}{4e - 12ef}$
  $= 4e(1 - 3f)$

→ ***faktor ~ 2***

$a^2 - b^2 = (a + b)(a - b)$						
$1 = 1^2$	$4 = 2^2$	$9 = 3^2$	$16 = 4^2$	$25 = 5^2$	$36 = 6^2$	$49 = 7^2$
$64 = 8^2$	$81 = 9^2$	$100 = 10^2$	$121 = 11^2$	$144 = 12^2$	$169 = 13^2$	$196 = 14^2$

- Faktor selengkapnya : $100 - k^2$

  $= 10^2 - k^2$

  $= (10 + k)(10 - k)$

- Faktor selengkapnya : $9x^2 - 1$

  $= 3^2x^2 - 1^2$

  $= (3x + 1)(3x - 1)$

- Faktor selengkapnya : $3x^2 \overset{(3)}{-} 48$

  $= 3(x^2 - 16)$

  $= 3(x^2 - 4^2)$

  $= 3(x + 4)(x - 4)$

- Faktor selengkapnya : $5 \overset{(5)}{-} 20k^2$

  $= 5(1 - 4k^2)$

  $= 3(1^2 - 2^2k^2)$

  $= 3(1 + 2k)(1 - 2k)$

→ ***faktor ~ 3***

- Faktor selengkapnya : $\overset{(3)}{3k - 3m} + \overset{(k)}{kp - mp}$

  $= 3(k - m) + p(k - m)$

  $= (k - m)(3 + p)$

- Faktor selengkapnya : $\overset{(p)}{p^2 + 3p} - \overset{(q)}{3q - pq}$

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

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

- Faktor selengkapnya : $\overset{(e)}{e^2 - 2e} - \overset{(f)}{2f + ef}$

  $= e(e - 2) - f(2 - e)$

  $= e(e - 2) + f(e - 2)$

  $= (e - 2)(e - f)$

- Faktor selengkapnya : $\overset{(2)}{2 - 2w} + \overset{(v)}{vw - v}$

  $= 2(1 - w) + v(w - 1)$

  $= e(1 - w) + f(1 - w)$

  $= (1 - w)(e + f)$

- Faktor selengkapnya : $m^2 - 12m + 36$

  $= \overset{(m)}{m^2 - 6m} - \overset{(6)}{6m + 36}$

  $= m(m - 6) - 6(m - 6)$ @

  $= (m - 6)(m - 6)$

  $= (m - 6)^2$

m	-6	$-6m$
m	-6	$-6m$
m^2	$+36$	$-12m$

$= (m - 6)^2$

- Faktor selengkapnya : $3x^2 + 12x + 12$

  $= 3(x^2 + 4x + 4)$

  $= 3(\overset{(x)}{x^2 + 2x} + \overset{(2)}{2x + 4})$ @

  $= 3[x(x + 2) + 2(x + 2)]$

  $= 3(x + 2)(x + 2)$

  $= 3(x + 2)^2$

$= 3(x^2 + 4x + 4)$

x	$+2$	$+2x$
x	$+2$	$+2x$
x^2	$+4$	$+4x$

$= (x + 2)^2$

→ ***faktor ~ 4***

• Faktor selengkapnya : $3x^2 - 2(x-1) - 7$ $= 3x^2 - 2x + 2 - 7$ $= 3x^2 - 2x - 5$ $\begin{array}{ccc\|c} 3x & & +5 & +5x \\ x & & -1 & -3x \\ \hline 3x^2 & & -5 & -2x \end{array}$ $= (3x+5)(x-1)$	• Faktor selengkapnya : $2m^2 - n(m+n)$ $= 2m^2 - mn - n^2$ $\begin{array}{ccc\|c} 2m & & +n & +mn \\ m & & -n & -2mn \\ \hline 3m^2 & & -n^2 & -mn \end{array}$ $= (2m+n)(m-n)$

→ ***pecahan algebra***

• $\frac{1}{5m}_{(3v)} - \frac{5-2v}{15mv}$ $= \frac{3v-(5-2v)}{15mv}$ $= \frac{3v-5+2v}{15mv}$ $= \frac{5v-5}{15mv}_{(5)}$ $= \frac{v-1}{3mv}$	• $\frac{1}{2m}_{(3m)} - \frac{m+2}{6m^2}$ $= \frac{3m-(m+2)}{6m^2}$ $= \frac{3m-m-2}{6m^2}$ $= \frac{2m-2}{6m^2}_{(2)}$ $= \frac{m-1}{3m^2}$	• $\frac{m+3}{3mn}_{(2)} - \frac{2+3n}{6n}_{(m)}$ $= \frac{2m+6-(2m+3mn)}{6mn}$ $= \frac{2m+6-2m-3mn}{6mn}$ $= \frac{6-3mn}{6mn}_{(3)}$ $= \frac{2-mn}{2mn}$
• $\frac{2}{x+3}_{(x-3)} - \frac{x+5}{x^2-9}$ $= \frac{2x-6-(x+5)}{x^2-9}$ $= \frac{2x-6-x-5}{x^2-9}$ $= \frac{x-11}{x^2-9}$	• $\frac{2nm}{p} \times \frac{pq^{(p)} + pm}{nm^2}$ $= \frac{2\cancel{nm}}{\cancel{p}} \times \frac{\cancel{p}(q+m)}{\cancel{nm}m}$ $= \frac{2(q+m)}{m}$ $= \frac{2q+2m}{m}$	• $\frac{2mn^{(2n)}+4n}{9-n^2} \div \frac{6mn}{3-n}$ $= \frac{2\cancel{n}(m+2)}{(3+n)\cancel{(3-n)}} \times \frac{\cancel{3-n}}{{}_{3}\cancel{6}m\cancel{n}}$ $= \frac{m+2}{3m(3+n)}$

No	Topic	Mark	HOTS
1.	3.6.1: Expansion	3	
2.	3.6.1: Expansion	3	
3.	3.6.1: Expansion	3	
4.	3.6.1: Expansion	4	
5.	3.6.1: Expansion	4	
6.	3.6.1: Expansion	4	
7.	3.6.1: Expansion	10	Yes
8.	3.6.1: Expansion	10	Yes
9.	3.6.1: Expansion	10	Yes
10.	3.6.1: Expansion	4	
11.	3.6.1: Expansion	4	
12.	3.6.2: Factorisation	4	
13.	3.6.2: Factorisation	4	
14.	3.6.2: Factorisation	3	
15.	3.6.2: Factorisation	3	
16.	3.6.2: Factorisation	10	Yes
17.	3.6.2: Factorisation	10	Yes
18.	3.6.2: Factorisation	4	
19.	3.6.2: Factorisation	4	
20.	3.6.2: Factorisation	4	
21.	3.6.2: Factorisation	3	
22.	3.6.4: Multiplication and Division of Algebraic Fractions	3	Yes
23.	3.6.4: Multiplication and Division of Algebraic Fractions	3	
24.	3.6.4: Multiplication and Division of Algebraic Fractions	3	Yes
25.	3.6.4: Multiplication and Division of Algebraic Fractions	3	Yes
26.	3.6.4: Multiplication and Division of Algebraic Fractions	3	Yes
	TOTAL	123	

BAHAGIAN 1

Question 1/Soalan 1

1. Simplify $(5h + 5)^2 - (3h + 1)$.
Permudahkan $(5h + 5)^2 - (3h + 1)$.

[3 *marks*/3 *markah*]

Answer/*Jawapan:*

Question 2/Soalan 2

2. Simplify $(4m - 2n)^2 + 3m(2n + 3m)$.
Permudahkan $(4m - 2n)^2 + 3m(2n + 3m)$.

[3 *marks*/3 *markah*]

Answer/*Jawapan:*

Question 3/Soalan 3

3. Simplify $4(3b - 1) + (2 + 9b)^2$.
Permudahkan $4(3b - 1) + (2 + 9b)^2$.

[3 *marks*/3 *markah*]

Answer/*Jawapan:*

Question 4/Soalan 4

4. Expand each of the following expressions.
Kembangkan setiap ungkapan berikut.
(a) $3m(2 - 2n)$
(b) $(2s + 9t)^2$

[4 *marks*/4 *markah*]

Answer/*Jawapan:*

Question 5/Soalan 5

5. Expand each of the following expressions.
Kembangkan setiap ungkapan berikut.
(a) $(5x - 1)^2$
(b) $(4m - 4n)^2$

[4 *marks*/4 *markah*]

Answer/*Jawapan:*

Question 6/Soalan 6

6. Expand each of the following expressions.
Kembangkan setiap ungkapan berikut.
(a) $(4x - 2y)(5x - 5y)$
(b) $(5p - 5)(3p - 5)$

[4 *marks*/4 *markah*]

Answer/*Jawapan:*

Question 7/Soalan 7

7. Write three different multiplication problems for which the product is $5x^2 - 20x$.
Tuliskan tiga masalah pendaraban yang berlainan di mana hasil darabnya ialah $5x^2 - 20x$.

[10 *marks*/10 *markah*]

Answer/*Jawapan:*

Question 8/Soalan 8

8. Write two algebraic expressions that have $-8y$ as one of the terms in their product.
Tuliskan dua ungkapan algebra yang mempunyai $-8y$ *sebagai salah satu sebutan dalam hasil darab kedua-dua ungkapan tersebut.*

[10 *marks*/10 *markah*]

Answer/*Jawapan:*

Question 9/Soalan 9

9. Does the product of two algebraic expressions always have three terms? If so, explain why. If not, give a counter-example.
Adakah hasil darab bagi dua ungkapan algebra sentiasa mempunyai tiga sebutan? Jika ya, terangkan mengapa. Jika tidak, berikan satu contoh penyangkal.

[10 *marks*/10 *markah*]

Answer/*Jawapan:*

Question 10/Soalan 10

10. Expand each of the following expressions.
Kembangkan setiap ungkapan berikut.
(a) $2(3 - x)$
(b) $5(4y - 1)^2$

[4 *marks*/4 *markah*]

Answer/*Jawapan:*

Question 11/Soalan 11

11. (a) Expand:
Kembangkan:

$$4(5p - 2)$$

(b) Simplify:
Permudahkan:

$$(t - 2s)(t + 2s) - 3t^2$$

[4 *marks*/4 *markah*]

Answer/*Jawapan:*

Question 12/Soalan 12

12. Factorise completely.
Faktorkan dengan lengkapnya.
(a) $12p^2 + 3pq$
(b) $a^2 - 5(a + 5) - (3 - 2a)$

[4 *marks*/4 *markah*]

Answer/*Jawapan:*

Question 13/Soalan 13

13. Factorise completely.
Faktorkan dengan lengkapnya.
(a) $3s + 27st$
(b) $3b^2 - 48$

[4 *marks*/4 *markah*]

Answer/*Jawapan:*

Question 14/Soalan 14

14. Factorise $4 - 4y^2$ completely.
Faktorkan $4 - 4y^2$ *dengan lengkapnya.*

[3 *marks*/3 *markah*]

Answer/*Jawapan:*

Question 15/Soalan 15

15. State the highest common factor for $8m^2n$ and $4mn^2$.
Nyatakan faktor sepunya terbesar bagi $8m^2n$ *dan* $4mn^2$.

[3 *marks*/3 *markah*]

Answer/*Jawapan:*

Question 16/Soalan 16

16. Complete the following algebraic expression with a positive integer so that the resulting algebraic expression can be factored.
Lengkapkan ungkapan algebra berikut dengan satu integer positif supaya ungkapan algebra tersebut boleh difaktorkan.

$$4c^2 - 16c + \_\_\_\_\_$$

[10 *marks*/10 *markah*]

Answer/*Jawapan:*

Question 17/Soalan 17

17. Explain why the following algebraic expression cannot be factored.
Terangkan mengapa ungkapan algebra berikut tidak boleh difaktorkan.

$$x^2 + x + 7$$

[10 *marks*/10 *markah*]

Answer/*Jawapan:*

Question 18/Soalan 18

18. Factorise completely each of the following expressions:
Faktorkan dengan selengkapnya tiap-tiap ungkapan berikut:
(a) $3x - xy$
(b) $4p - pq^2$

[4 *marks*/4 *markah*]

Answer/*Jawapan:*

Question 19/Soalan 19

19. Factorise completely each of the following expressions:
Faktorkan dengan selengkapnya tiap-tiap ungkapan berikut:
(a) $3s^2 - 2ts$
(b) $pq + q + 4p + 4$

[4 *marks*/4 *markah*]

Answer/*Jawapan:*

Question 20/Soalan 20

20. Factorise completely each of the following expressions:
Faktorkan dengan selengkapnya tiap-tiap ungkapan berikut:
(a) $3x - 15$
(b) $5p^2 + 20p + 20$

[4 *marks*/4 *markah*]

Answer/*Jawapan:*

Question 21/Soalan 21

21. Factorise completely.
Faktorkan dengan lengkapnya.
(i) $15s^2 + 12st$
(ii) $d^2 - 5(d - 4) - (-5 + 5d)$
(iii) $2x^2 + 16x + 32$

[3 *marks*/3 *markah*]

Answer/*Jawapan:*

Question 22/Soalan 22

22. Simplify $\frac{5wx}{y^2 - z^2} \div \frac{2x}{y + z}$.
Permudahkan $\frac{5wx}{y^2 - z^2} \div \frac{2x}{y + z}$.

[3 *marks*/3 *markah*]

Answer/*Jawapan:*

Question 23/Soalan 23

23. Simplify $(2x^2y + 2xy) \times \frac{2}{1 + x}$.
Permudahkan $(2x^2y + 2xy) \times \frac{2}{1 + x}$.

[3 *marks*/3 *markah*]

Answer/*Jawapan:*

Question 24/Soalan 24

24. Simplify $\frac{2k-4}{2k+4} \times \frac{4k^2-16}{2}$.

Permudahkan $\frac{2k-4}{2k+4} \times \frac{4k^2-16}{2}$.

[3 *marks*/3 *markah*]

Answer/*Jawapan:*

Question 25/Soalan 25

25. Express $\frac{5s}{t^2-1} \div \frac{3}{2s+2st}$ as a single fraction in its simplest form.

Ungkapkan $\frac{5s}{t^2-1} \div \frac{3}{2s+2st}$ *sebagai satu pecahan tunggal dalam bentuk termudah.*

[3 *marks*/3 *markah*]

Answer/*Jawapan:*

Question 26/Soalan 26

26. Express $\frac{4p}{q^2-1} \div \frac{4}{2p+2pq}$ as a single fraction in its simplest form.

Ungkapkan $\frac{4p}{q^2-1} \div \frac{4}{2p+2pq}$ *sebagai satu pecahan tunggal dalam bentuk termudah.*

[3 *marks*/3 *markah*]

Answer/*Jawapan:*

BAHAGIAN 2:

Question 1/Soalan 1

1. Simplify $(4d + 1)^2 - (4d - 5)$.
Permudahkan $(4d + 1)^2 - (4d - 5)$.

[3 *marks*/3 *markah*]

Answer/*Jawapan:*

Question 2/Soalan 2

2. Simplify $(3x + 3y)^2 + 4x(3y - 5x)$.
Permudahkan $(3x + 3y)^2 + 4x(3y - 5x)$.

[3 *marks*/3 *markah*]

Answer/*Jawapan:*

Question 3/Soalan 3

3. Simplify $4(6a - 4) + (10 + a)^2$.
Permudahkan $4(6a - 4) + (10 + a)^2$.

[3 *marks*/3 *markah*]

Answer/*Jawapan:*

Question 4/Soalan 4

4. Expand each of the following expressions.
Kembangkan setiap ungkapan berikut.
(a) $2s(1 - t)$
(b) $(5x + y)^2$

[4 *marks*/4 *markah*]

Answer/*Jawapan:*

Question 5/Soalan 5

5. Expand each of the following expressions.
Kembangkan setiap ungkapan berikut.
(a) $(5h - 5)^2$
(b) $(p + 4q)^2$

[4 *marks*/4 *markah*]

Answer/*Jawapan:*

Question 6/Soalan 6

6. Expand each of the following expressions.
Kembangkan setiap ungkapan berikut.
(a) $(3m - n)(4m - n)$
(b) $(a - 2)(a - 4)$

[4 *marks*/4 *markah*]

Answer/*Jawapan:*

Question 7/Soalan 7

7. Write three different multiplication problems for which the product is $9x^2 + 18x$.
Tuliskan tiga masalah pendaraban yang berlainan di mana hasil darabnya ialah $9x^2 + 18x$.

[10 *marks*/10 *markah*]

Answer/*Jawapan:*

Question 8/Soalan 8

8. Write two algebraic expressions that have $-10m$ as one of the terms in their product.
Tuliskan dua ungkapan algebra yang mempunyai $-10m$ *sebagai salah satu sebutan dalam hasil darab kedua-dua ungkapan tersebut.*

[10 *marks*/10 *markah*]

Answer/*Jawapan:*

Question 9/Soalan 9

9. Does the product of two algebraic expressions always have three terms? If so, explain why. If not, give a counter-example.
Adakah hasil darab bagi dua ungkapan algebra sentiasa mempunyai tiga sebutan? Jika ya, terangkan mengapa. Jika tidak, berikan satu contoh penyangkal.

[10 *marks*/10 *markah*]

Answer/*Jawapan:*

Question 10/Soalan 10

10. Expand each of the following expressions.
Kembangkan setiap ungkapan berikut.
(a) $4(3 - 4s)$
(b) $5(4t - 1)^2$

[4 *marks*/4 *markah*]

Answer/*Jawapan:*

Question 11/Soalan 11

11. (a) Expand:
Kembangkan:

$$4(4s - 1)$$

(b) Simplify:
Permudahkan:

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

[4 *marks*/4 *markah*]

Answer/*Jawapan:*

Question 12/Soalan 12

12. Factorise completely.
Faktorkan dengan lengkapnya.
(a) $14s^2 + 4st$
(b) $d^2 + 1(d - 1) - (-2 - d)$

[4 *marks*/4 *markah*]

Answer/*Jawapan:*

Question 13/Soalan 13

13. Factorise completely.
Faktorkan dengan lengkapnya.
(a) $3p + 18pq$
(b) $3m^2 - 3$

[4 *marks*/4 *markah*]

Answer/*Jawapan:*

Question 14/Soalan 14

14. Factorise $160 - 10d^2$ completely.
Faktorkan $160 - 10d^2$ *dengan lengkapnya.*

[3 *marks*/3 *markah*]

Answer/*Jawapan:*

Question 15/Soalan 15

15. State the highest common factor for $6p^2q$ and $8pq^2$.
Nyatakan faktor sepunya terbesar bagi $6p^2q$ *dan* $8pq^2$.

[3 *marks*/3 *markah*]

Answer/*Jawapan:*

Question 16/Soalan 16

16. Complete the following algebraic expression with a positive integer so that the resulting algebraic expression can be factored.
Lengkapkan ungkapan algebra berikut dengan satu integer positif supaya ungkapan algebra tersebut boleh difaktorkan.

$$3q^2 - 15q + \_\_\_\_\_$$

[10 *marks*/10 *markah*]

Answer/*Jawapan:*

Question 17/Soalan 17

17. Explain why the following algebraic expression cannot be factored.
Terangkan mengapa ungkapan algebra berikut tidak boleh difaktorkan.

$$s^2 + s + 3$$

[10 *marks*/10 *markah*]

Answer/*Jawapan:*

Question 18/Soalan 18

18. Factorise completely each of the following expressions:
Faktorkan dengan selengkapnya tiap-tiap ungkapan berikut:
(a) $3p - pq$
(b) $4x - xy^2$

[4 *marks*/4 *markah*]

Answer/*Jawapan:*

Question 19/Soalan 19

19. Factorise completely each of the following expressions:
Faktorkan dengan selengkapnya tiap-tiap ungkapan berikut:
(a) $5p^2 - qp$
(b) $st + 5t + 4s + 20$

[4 *marks*/4 *markah*]

Answer/*Jawapan:*

Question 20/Soalan 20

20. Factorise completely each of the following expressions:
Faktorkan dengan selengkapnya tiap-tiap ungkapan berikut:
(a) $3p + 12$
(b) $5x^2 + 40x + 80$

[4 *marks*/4 *markah*]

Answer/*Jawapan:*

Question 21/Soalan 21

21. Factorise completely.
Faktorkan dengan lengkapnya.
(i) $12x^2 + 10xy$
(ii) $k^2 + 2(k + 5) - (4 - 3k)$
(iii) $5s^2 + 50s + 125$

[3 *marks*/3 *markah*]

Answer/*Jawapan:*

Question 22/Soalan 22

22. Simplify $\frac{4wx}{y^2 - z^2} \div \frac{2x}{y + z}$.
Permudahkan $\frac{4wx}{y^2 - z^2} \div \frac{2x}{y + z}$.

[3 *marks*/3 *markah*]

Answer/*Jawapan:*

Question 23/Soalan 23

23. Simplify $(2m^2n + 2mn) \times \frac{9}{1 + m}$.
Permudahkan $(2m^2n + 2mn) \times \frac{9}{1 + m}$.

[3 *marks*/3 *markah*]

Answer/*Jawapan:*

Question 24/Soalan 24

24. Simplify $\frac{3p+2}{3p-2} \times \frac{9p^2-4}{5}$.

Permudahkan $\frac{3p+2}{3p-2} \times \frac{9p^2-4}{5}$.

[3 *marks*/3 *markah*]

Answer/*Jawapan:*

Question 25/Soalan 25

25. Express $\frac{4s}{t^2-1} \div \frac{3}{2s+2st}$ as a single fraction in its simplest form.

Ungkapkan $\frac{4s}{t^2-1} \div \frac{3}{2s+2st}$ *sebagai satu pecahan tunggal dalam bentuk termudah.*

[3 *marks*/3 *markah*]

Answer/*Jawapan:*

Question 26/Soalan 26

26. Express $\frac{5p}{q^2-1} \div \frac{1}{2p+2pq}$ as a single fraction in its simplest form.

Ungkapkan $\frac{5p}{q^2-1} \div \frac{1}{2p+2pq}$ *sebagai satu pecahan tunggal dalam bentuk termudah.*

[3 *marks*/3 *markah*]

Answer/*Jawapan:*

BAB 3: RUMUS ALGEBRA

No	Topic	Mark	HOTS
1.	3.7.2: Formulae	3	
2.	3.7.2: Formulae	3	
3.	3.7.2: Formulae	3	
4.	3.7.2: Formulae	3	
5.	3.7.2: Formulae	3	
6.	3.7.2: Formulae	3	
7.	3.7.2: Formulae	3	
8.	3.7.2: Formulae	3	
9.	3.7.2: Formulae	3	
10.	3.7.2: Formulae	3	
11.	3.7.2: Formulae	3	
12.	3.7.2: Formulae	3	
13.	3.7.2: Formulae	3	
14.	3.7.2: Formulae	3	
15.	3.7.2: Formulae	3	
16.	3.7.2: Formulae	3	
17.	3.7.2: Formulae	3	
18.	3.7.2: Formulae	3	
19.	3.7.2: Formulae	3	
20.	3.7.2: Formulae	3	
	TOTAL	60	

(C) RUMUS ALGEBRA **[CATATAN : perkara rumus sentiasa positif]**

→ ***perkara rumus***

• $\frac{2(p-3)}{k} = 5 \sim (P)$ $2p - 6 = 5k$ $2p = 5k + 6$ $p = \frac{5k+6}{2}$	• $k - (m + 2) = 3m \sim (m)$ $k - m - 2 = 3m$ $k - 2 = 3m + m$ $k - 2 = 4m$ $\frac{k-2}{4} = m$	• $\frac{8m-2n}{3} = mn+n \sim (m)$ $8m - 2n = 3mn + 3n$ $8m - 3mn = 3n + 2n$ **(m)** $m(8 - 3n) = 5n$ $m = \frac{5n}{8-3n}$
• $m = 5 - 3n^2 \sim (n)$ $3n^2 = 5 - m$ $n^2 = \frac{5-m}{3}$ $n = \sqrt{\frac{5-m}{3}}$	• $\sqrt{\frac{2+g}{h}} = 3 \sim (g)$ $\frac{2+g}{h} = 3^2$ $\frac{2+g}{h} = 9$ $2 + g = 9h$ $g = 9h - 2$	• $\frac{\sqrt{k+m}}{2} = h \sim (m)$ $\sqrt{k+m} = 2k$ $k + m = (2k)^2$ $k + m = 4k^2$ $k = 4k^2 - m$

→ ***menentukan nilai suatu pembolehubah***

- Diberi $y = 2p - 4q + 3r$. Cari

  (i) nilai y apabila $p = 5$, $q = -1$ dan $r = 3$

  $\therefore\ y = 2(5) - 4(-1) + 3(3)$

  $= 18$

  (ii) nilai q apabila $y = 4$, $p = 7$ dan $r = 2$

  $\therefore\ 4 = 2(7) - 4q + 3(2)$

  $4 = 14 - 4q + 6$

  $4 - 14 - 6 = -4q$

  $4 = q$

Question 1/Soalan 1

1. Given that $\dfrac{8(7x - 6y)}{5y + 2} = 5$, express x in terms of y.

   Diberi $\dfrac{8(7x - 6y)}{5y + 2} = 5$, *nyatakan x dalam sebutan y.*

[3 *marks*/3 *markah*]

Answer/*Jawapan:*

Question 2/Soalan 2

2. Given that $\dfrac{8(7m - 4n)}{5n + 8} = 5$, express m in terms of n.

   Diberi $\dfrac{8(7m - 4n)}{5n + 8} = 5$, *nyatakan m dalam sebutan n.*

[3 *marks*/3 *markah*]

Answer/*Jawapan:*

Question 3/Soalan 3

3. Given that $\frac{2p-7}{2p+q} = 2$, express p in terms of q.

Diberi $\frac{2p-7}{2p+q} = 2$, *nyatakan p dalam sebutan q.*

[3 *marks*/3 *markah*]

Answer/*Jawapan:*

Question 4/Soalan 4

4. Given that $\frac{m-1}{4m+7n} = 5$, express m in terms of n.

Diberi $\frac{m-1}{4m+7n} = 5$, *nyatakan m dalam sebutan n.*

[3 *marks*/3 *markah*]

Answer/*Jawapan:*

Question 5/Soalan 5

5. Given that $x = \frac{5y-7xz}{9}$, express x in terms of y and z.

Diberi $x = \frac{5y-7xz}{9}$, *nyatakan x dalam sebutan y dan z.*

[3 *marks*/3 *markah*]

Answer/*Jawapan:*

Question 6/Soalan 6

6. Given that $s = \frac{3t - 7su}{6}$, express s in terms of t and u.

Diberi $s = \frac{3t - 7su}{6}$, *nyatakan s dalam sebutan t dan u.*

[3 *marks*/3 *markah*]

Answer/*Jawapan:*

Question 7/Soalan 7

7. Given that $81m^2 + 7 = 3n$, express m in terms of n.
Diberi $81m^2 + 7 = 3n$, *nyatakan m dalam sebutan n.*

[3 *marks*/3 *markah*]

Answer/*Jawapan:*

Question 8/Soalan 8

8. Given that $49m^2 + 3 = 3n$, express m in terms of n.
Diberi $49m^2 + 3 = 3n$, *nyatakan m dalam sebutan n.*

[3 *marks*/3 *markah*]

Answer/*Jawapan:*

Question 9/Soalan 9

9. If $z = \frac{5y - 7x^2}{4x}$, then find the value of y when $x = 3$ and $z = 4$.

Jika $z = \frac{5y - 7x^2}{4x}$, *maka cari nilai y apabila* $x = 3$ *dan* $z = 4$.

[3 *marks*/3 *markah*]

Answer/*Jawapan:*

Question 10/Soalan 10

10. If $r = \frac{q - p^2}{9p}$, then find the value of q when $p = 8$ and $r = 6$.

Jika $r = \frac{q - p^2}{9p}$, *maka cari nilai q apabila* $p = 8$ *dan* $r = 6$.

[3 *marks*/3 *markah*]

Answer/*Jawapan:*

Question 11/Soalan 11

11. Given that $5x = \frac{4y(2x - 3)}{y + 5}$, express x in terms of y.

Diberi $5x = \frac{4y(2x - 3)}{y + 5}$, *nyatakan x dalam sebutan y.*

[3 *marks*/3 *markah*]

Answer/*Jawapan:*

Question 12/Soalan 12

12. Given that $Y = \frac{a(4b - 5c)}{4d}$, express b in terms of Y, a, c and d.

Diberi $Y = \frac{a(4b - 5c)}{4d}$, *nyatakan b dalam sebutan Y, a, c dan d.*

[3 *marks*/3 *markah*]

Answer/*Jawapan:*

Question 13/Soalan 13

13. Given that $C = \frac{a(4b + c)}{4d}$, express b in terms of C, a, c and d.

Diberi $C = \frac{a(4b + c)}{4d}$, *nyatakan b dalam sebutan C, a, c dan d.*

[3 *marks*/3 *markah*]

Answer/*Jawapan:*

Question 14/Soalan 14

14. Given that $3p = \frac{4q}{\sqrt{r}}$, express r in terms of p and q.

Diberi $3p = \frac{4q}{\sqrt{r}}$, *nyatakan r dalam sebutan p dan q.*

[3 *marks*/3 *markah*]

Answer/*Jawapan:*

Question 15/Soalan 15

15. Given that $a - 5 = \frac{4b}{c^2}$, find the value of a if $b = 4$ and $c = 2$.

Diberi $a - 5 = \frac{4b}{c^2}$, *cari nilai bagi a jika b* = 4 *dan c* = 2.

[3 *marks*/3 *markah*]

Answer/*Jawapan:*

Question 16/Soalan 16

16. Given that $B = \frac{5d + d^3}{9}$, find the value of B if $d = 5$.

Diberi $B = \frac{5d + d^3}{9}$, *cari nilai bagi B jika d* = 5.

[3 *marks*/3 *markah*]

Answer/*Jawapan:*

Question 17/Soalan 17

17. Given that $2p = 3pq + 3$, express q in terms of p.
Diberi $2p = 3pq + 3$, *nyatakan q dalam sebutan p.*

[3 *marks*/3 *markah*]

Answer/*Jawapan:*

Question 18/Soalan 18

18.

Given that $\frac{\sqrt{p+q}}{2} = 3r$, express q in terms of r and p.

Diberi $\frac{\sqrt{p+q}}{2} = 3r$, *nyatakan q dalam sebutan r dan p.*

[3 *marks*/3 *markah*]

Answer/*Jawapan:*

Question 19/Soalan 19

19. Given $\frac{x^2 - 9}{2} = p$, express x in terms of p.

Diberi $\frac{x^2 - 9}{2} = p$, *nyatakan x dalam sebutan p.*

[3 *marks*/3 *markah*]

Answer/*Jawapan:*

Question 20/Soalan 20

20.

Given $\frac{\sqrt{5s+3t}}{5} = u$.

Diberi $\frac{\sqrt{5s+3t}}{5} = u$.

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

(ii) Calculate the value of t if $u = 2$ and $s = 2$.
Hitungkan nilai t jika u = 2 dan s = 2.

[3 *marks*/3 *markah*]

Answer/*Jawapan:*

BAHAGIAN 2

1 Given that $s = 4(t + 4u)$, then $t =$
Diberi $s = 4(t + 4u)$, maka $t =$

A $\frac{s - 16u}{4}$ **C** $\frac{s - 4u}{4}$

B $\frac{s + 4u}{4}$ **D** $\frac{s + 16u}{4}$

2 Given that $6p = 9q - 8r$, then $q =$
Diberi $6p = 9q - 8r$, maka $q =$

A $\frac{6p + 8r}{9}$ **C** $\frac{6p + 9}{8r}$

B $\frac{6p - 9}{8r}$ **D** $\frac{6p - 8r}{9}$

3 Given that $s = \frac{3}{5t - 6}$, then $t =$

Diberi $s = \frac{3}{5t - 6}$, maka $t =$

A $\frac{3 + 6s}{5s}$ **C** $\frac{3 + 6s}{5}$

B $\frac{3 - 6s}{5}$ **D** $\frac{3 - 6s}{5s}$

4 Given that $x = 3y + 2z$, express y in terms of z and x.
Diberi bahawa $x = 3y + 2z$, ungkapkan y dalam sebutan z dan x.

A $y = \frac{x}{3} + 2z$ **C** $y = \frac{x + 2z}{3}$

B $y = \frac{x}{3} - 2z$ **D** $y = \frac{x - 2z}{3}$

5 Given that $2m - \frac{7n}{8} = 3$, then $m =$

Diberi $2m - \frac{7n}{8} = 3$, maka $m =$

A $\frac{24 + 7n}{16}$ **C** $\frac{3 + 7n}{16}$

B $\frac{24 + 7n}{2}$ **D** $\frac{3 + 7n}{2}$

6 Given that $p = \frac{4d}{4 + 3d}$, express d in terms of p.

Diberi bahawa $p = \frac{4d}{4 + 3d}$, ungkapkan d dalam sebutan p.

A $d = \frac{4p}{4 + 3p}$ **C** $d = \frac{4 + 3p}{4p}$

B $d = \frac{4p}{4 - 3p}$ **D** $d = \frac{4 - 3p}{4p}$

7 Given that $S = \frac{1}{2}\sqrt{\frac{m}{T}}$, express m in terms of S and T.

Diberi bahawa $S = \frac{1}{2}\sqrt{\frac{m}{T}}$, ungkapkan m dalam sebutan S dan T.

A $m = \frac{S^2}{4T}$ **C** $m = 4S^2T$

B $m = \frac{S^2}{2T}$ **D** $m = 2S^2T$

8 Given that $n = 4m^2 + 3$, express m in terms of n.
Diberi bahawa $n = 4m^2 + 3$, ungkapkan m dalam sebutan n.

A $m = \frac{\sqrt{n - 3}}{4}$ **C** $m = \sqrt{\frac{n - 3}{4}}$

B $m = \frac{\sqrt{n + 3}}{4}$ **D** $m = \sqrt{\frac{n + 3}{4}}$

9 Given that $s = 4 - 25t^2$, then $t =$
Diberi $s = 4 - 25t^2$, maka $t =$

A $\frac{\sqrt{4 - s}}{5}$ **C** $\sqrt{\frac{4 - s}{5}}$

B $\frac{4 - s}{5}$ **D** $\frac{2 - \sqrt{s}}{25}$

10 Given that $P = 5\left(\sqrt{\frac{1}{H + Q}}\right)$, express H in terms of P and Q.

Diberi bahawa $P = 5\left(\sqrt{\frac{1}{H + Q}}\right)$, ungkapkan H dalam sebutan P dan Q.

A $H = \frac{5}{P^2} - Q$ **C** $H = \frac{5}{P^2} - P^2Q$

B $H = \frac{25}{P^2} - Q$ **D** $H = \frac{25}{P^2} - P^2Q$

11 Given that $\frac{s - t}{5} = st + t$, express s in terms of t.

Diberi bahawa $\frac{s - t}{5} = st + t$, ungkapkan s dalam sebutan t.

A $s = \frac{4t}{1 - 5t}$ **C** $s = \frac{6t}{1 - 5t}$

B $s = \frac{4t}{5t - 1}$ **D** $s = \frac{6t}{5t - 1}$

12 Given that $3y = \frac{2y-4}{x-1}$, express y in terms of x.
Diberi bahawa $3y = \frac{2y-4}{x-1}$, *ungkapkan y dalam sebutan x.*

A $y = \frac{4}{3x}$ **C** $y = \frac{4}{5-3x}$

B $y = \frac{4}{3x-5}$ **D** $y = \frac{4}{5+3x}$

13 Given that $\sqrt{\frac{4m+8n}{9}} = 9$, then $m =$
Diberi $\sqrt{\frac{4m+8n}{9}} = 9$, *maka* $m =$

A $\frac{81-8n}{4}$ **C** $\frac{729-8n}{4}$

B $\frac{(729-8n)^2}{4}$ **D** $\frac{(81-8n)^2}{4}$

14 Given that $p = \frac{5}{9} + \frac{q}{8}$, express q in terms of p.
Diberi bahawa $p = \frac{5}{9} + \frac{q}{8}$, *ungkapkan q dalam sebutan p.*

A $q = \frac{72p-40}{9}$

B $q = \frac{40-72p}{9}$

C $q = \frac{5-72p}{9}$

D $q = 9p - 5$

15 Given that $\frac{5}{6x+7y} = 5$, then x =
Diberi $\frac{5}{6x+7y} = 5$, *maka* $x =$

A $1 + 35y$ **C** $\frac{1+35y}{30}$

B $\frac{1-7y}{6}$ **D** $1 - 35y$

16 Given that $8r^2 = 49p^2 + 7q^2$, write p in terms of q and r.
Diberi $8r^2 = 49p^2 + 7q^2$, *tulis p dalam sebutan q dan r.*

A $\frac{8r-7q}{49}$ **C** $\frac{\sqrt{8r^2-7q^2}}{49}$

B $\frac{\sqrt{8r^2-7q^2}}{7}$ **D** $\frac{8r-7q}{7}$

17 Given that $4 + 4x^2 = 5(2y + 8x^2)$, express x in terms of y.
Diberi bahawa $4 + 4x^2 = 5(2y + 8x^2)$, *ungkapkan x dalam sebutan y.*

A $x = \frac{\sqrt{4-10y}}{36}$ **C** $x = \frac{\sqrt{4-10y}}{6}$

B $x = \frac{\sqrt{10y-4}}{36}$ **D** $x = \frac{\sqrt{10y-4}}{6}$

18 Given that $\frac{8(4p-q)}{5q} = 7$, then $q =$
Diberi $\frac{8(4p-q)}{5q} = 7$, *maka* $q =$

A $\frac{8p}{43}$ **C** $\frac{8p}{9}$

B $\frac{43p}{32}$ **D** $\frac{32p}{43}$

19 Given that $s = 7t^2 - 4t + 5$, find the value of s when $t = -3$.
Diberi $s = 7t^2 - 4t + 5$, *cari nilai s apabila* $t = -3$.

A -28 **C** 46

B -4 **D** 80

20 Given that $x = 2y^2 - y + 2$, find the value of x when $y = -2$.
Diberi $x = 2y^2 - y + 2$, *cari nilai x apabila* $y = -2$.

A 12 **C** 0

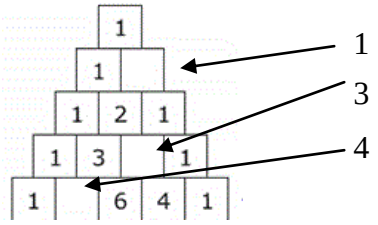
B 4 **D** -4

JAWAPAN

BAB 1: POLA & JUJUKAN

1 **1,5,13**

2



BAHAGIAN 2 – KIRI

1 (a) 80, 85
(b) 43, 37

2 82 + 61 = 143

3 $s = 37$, $t = 44$

4 25, 27, 29

5 68, 70, 72

6 (a) 12, 14
(b) 2

7 (a) odd
ganjil
(b) even
genap

BAHAGIAN 2 KANAN

1 (a) -43, -52
(b) 15, 20

2 113 + 93 = 206

3 $s = 124$, $t = 119$

4 33, 35, 37

5 34, 36, 38

6 (a) 16, 18
(b) 4

7 (a) odd
ganjil
(b) even
genap

BAHAGIAN 3 KIRI

1 C	**2** D	**3** B	**4** A	**5** A
6 B	**7** C	**8** A	**9** A	**10** B

BAHAGIAN 3 KANAN

1 D	**2** B	**3** A	**4** C	**5** B
6 B	**7** A	**8** B	**9** A	**10** A

BAB 2: PEMFAKTORAN & PECAHAN ALGEBRA

BAHAGIAN 1:

1. $(5h + 5)^2 - (3h + 1)$
$= (5h + 5)(5h + 5) - (3h + 1)$
$= 25h^2 + 50h + 25 - (3h + 1)$
$= 25h^2 + 50h - 3h + 25 - 1$
$= 25h^2 + 47h + 24$

2. $(4m - 2n)^2 + 3m(2n + 3m)$
$= (4m - 2n)(4m - 2n) + 3m(2n + 3m)$
$= (4m - 2n)(4m - 2n) + 6mn + 9m^2$
$= 16m^2 - 16mn + 4n^2 + 6mn + 9m^2$
$= 25m^2 - 10mn + 4n^2$

3. $4(3b - 1) + (2 + 9b)^2$
$= 12b - 4 + (2 + 9b)(2 + 9b)$
$= 12b - 4 + 4 + 36b + 81b^2$
$= 81b^2 + 48b$

4. (a) $3m(2 - 2n)$
$= 6m - 6mn$
(b) $(2s + 9t)^2$
$= (2s + 9t)(2s + 9t)$
$= 4s^2 + 36st + 81t^2$

5. (a) $(5x - 1)^2$
$= (5x - 1)(5x - 1)$
$= 25x^2 - 10x + 1$
(b) $(4m - 4n)^2$
$= (4m - 4n)(4m - 4n)$
$= 16m^2 - 32mn + 16n^2$

6. (a) $(4x - 2y)(5x - 5y)$
$= 4x \times 5x + 4x \times (-5y) +$
$(-2y) \times 5x + (-2y) \times (-5y)$
$= 20x^2 - 30xy + 10y^2$
(b) $(5p - 5)(3p - 5)$
$= 5p \times 3p + 5p \times (-5) +$
$(-5) \times 3p + (-5) \times (-5)$
$= 15p^2 - 40p + 25$

7. Sample answer:
Contoh jawapan:

$5(x^2 - 4x)$
$5x(x - 4)$
$x(5x - 20)$

8. Sample answer:
Contoh jawapan:

$(4y - 4)(5y + 3)$

9. Sample answer:
Contoh jawapan:

Not always have three terms. For example:
Bukan sentiasa mempunyai tiga sebutan. Sebagai contohnya:
$(2n + 4)(2n - 4)$
$= 4n^2 - 16$

10. (a) $2(3 - x)$
$= 6 - 2x$
(b) $5(4y - 1)^2$
$= 5(16y^2 - 8y + 1)$
$= 80y^2 - 40y + 5$

11. (a) $4(5p - 2)$
$= 20p - 8$
(b) $(t - 2s)(t + 2s) - 3t^2$
$= t^2 + 2st - 2st + 4s^2 - 3t^2$
$= t^2 + 4s^2 - 3t^2$
$= 4s^2 - 2t^2$

12. (a) $12p^2 + 3pq$
$= 3p \times 4p + 3p \times q$
$= 3p(4p + q)$
(b) $a^2 - 5(a + 5) - (3 - 2a)$
$= a^2 - 5a - 25 - 3 + 2a$
$= a^2 - 3a - 28$
$= (a - 7)(a + 4)$

13. (a) $3s + 27st$
$= 3s + 3s \times 9t$
$= 3s(1 + 9t)$
(b) $3b^2 - 48$
$= 3(b^2 - 16)$
$= 3(b - 4)(b + 4)$

14. $4 - 4y^2$
$= 4(1 - y^2)$
$= 4(1 - y)(1 + y)$

15. Factor of $8m^2n$:
Faktor bagi $8m^2n$:
1, 2, 4, 8, m, n, $2m$, $2n$, $4m$, $4n$, $8m$, $8n$, mn, $2mn$, $4mn$, $8mn$, m^2, $2m^2$, $4m^2$, $8m^2$, m^2n, $2m^2n$, $4m^2n$, $8m^2n$

Factor of $4mn^2$:
Faktor bagi $4mn^2$:
1, 2, 4, m, n, $2m$, $2n$, $4m$, $4n$, mn, $2mn$, $4mn$, n^2, $2n^2$, $4n^2$, mn^2, $2mn^2$, $4mn^2$

Common factor of $8m^2n$ and $4mn^2$:
Faktor sepunya bagi $8m^2n$ dan $4mn^2$:
1, 2, 4, m, n, $2m$, $2n$, $4m$, $4n$, mn, $2mn$, $4mn$

The highest common factor is
Faktor sepunya terbesar ialah
$4mn$

16. Sample answer:
Contoh jawapan:

$4c^2 - 16c + 15$
$= (2c - 3)(2c - 5)$

17. Sample answer:
Contoh jawapan:

The factor of 7 is 1, 7. So, (1×7) or $(-1 \times -7) = 7$.
Faktor bagi 7 ialah 1, 7. Maka, (1×7) atau $(-1 \times -7) = 7$.

$(x + 1)(x + 7) = x^2 + 8x + 7$
$(x - 1)(x - 7) = x^2 - 8x + 7$

18. (a) $3x - xy$
$= x(3 - y)$
(b) $4p - pq^2$
$= p(4 - q^2)$
$= p(2 + q)(2 - q)$

19. (a) $3s^2 - 2ts$
$= s(3s - 2t)$
(b) $pq + q + 4p + 4$
$= (pq + q) + (4p + 4)$
$= q(p + 1) + 4(p + 1)$
$= (p + 1)(q + 4)$

20. (a) $3x - 15$
$= 3(x - 5)$
(b) $5p^2 + 20p + 20$
$= 5(p^2 + 4p + 4)$
$= 5(p + 2)^2$

21. (i) $15s^2 + 12st$
$= 3s \times 5s + 3s \times 4t$
$= 3s(5s + 4t)$
(ii) $d^2 - 5(d - 4) - (-5 + 5d)$
$= d^2 - 5d + 20 + 5 - 5d$
$= d^2 - 10d + 25$
$= (d - 5)(d - 5)$
(iii) $2x^2 + 16x + 32$
$= 2(x^2 + 8x + 16)$
$= 2(x + 4)^2$

22. $\dfrac{5wx}{y^2 - z^2} \div \dfrac{2x}{y + z}$
$= \dfrac{5wx}{y^2 - z^2} \times \dfrac{y + z}{2x}$
$= \dfrac{5wx}{(y + z)(y - z)} \times \dfrac{y + z}{2x}$

$= \frac{5w}{y-z} \times \frac{1}{2}$

$= \frac{5w}{2(y-z)}$

23. $(2x^2y + 2xy) \times \frac{2}{1+x}$

$= 2xy(x+1) \times \frac{2}{1+x}$

$= 4xy$

24. $\frac{2k-4}{2k+4} \times \frac{4k^2-16}{2}$

$= \frac{2k-4}{2k+4} \times \frac{(2k-4)(2k+4)}{2}$

$= \frac{(2)(2)(k-2)^2}{2}$

$= \frac{4(k-2)^2}{2}$

$= 2(k-2)^2$

25. $\frac{5s}{t^2-1} \div \frac{3}{2s+2st}$

$\frac{5s}{t^2-1} \times \frac{2s+2st}{3}$

$= \frac{5s}{(t+1)(t-1)} \times \frac{2s(1+t)}{3}$

$= \frac{10s^2}{3(t-1)}$

26. $\frac{4p}{q^2-1} \div \frac{4}{2p+2pq}$

$\frac{4p}{q^2-1} \times \frac{2p+2pq}{4}$

$= \frac{4p}{(q+1)(q-1)} \times \frac{2p(1+q)}{4}$

$= \frac{8p^2}{4(q-1)}$

$= \frac{2p^2}{(q-1)}$

BAHAGIAN 2

1. $(4d+1)^2 - (4d-5)$
$= (4d+1)(4d+1) - (4d-5)$
$= 16d^2 + 8d + 1 - (4d-5)$
$= 16d^2 + 8d - 4d + 1 + 5$
$= 16d^2 + 4d + 6$

2. $(3x+3y)^2 + 4x(3y-5x)$
$= (3x+3y)(3x+3y) + 4x(3y-5x)$
$= (3x+3y)(3x+3y) + 12xy - 20x^2$
$= 9x^2 + 18xy + 9y^2 + 12xy - 20x^2$
$= -11x^2 + 30xy + 9y^2$

3. $4(6a-4) + (10+a)^2$
$= 24a - 16 + (10+a)(10+a)$
$= 24a - 16 + 100 + 20a + a^2$
$= a^2 + 44a + 84$

4. (a) $2s(1-t)$
$= 2s - 2st$
(b) $(5x+y)^2$
$= (5x+y)(5x+y)$
$= 25x^2 + 10xy + y^2$

5. (a) $(5h-5)^2$
$= (5h-5)(5h-5)$
$= 25h^2 - 50h + 25$
(b) $(p+4q)^2$
$= (p+4q)(p+4q)$
$= p^2 + 8pq + 16q^2$

6. (a) $(3m-n)(4m-n)$
$= 3m \times 4m + 3m \times (-n) + (-n) \times 4m + (-n) \times (-n)$
$= 12m^2 - 7mn + n^2$
(b) $(a-2)(a-4)$
$= a \times a + a \times (-4) + (-2) \times a + (-2) \times (-4)$
$= a^2 - 6a + 8$

7. Sample answer:
Contoh jawapan:

$9(x^2+2x)$
$9x(x+2)$
$x(9x+18)$

8. Sample answer:
Contoh jawapan:

$(m-2)(4m-2)$

9. Sample answer:
Contoh jawapan:

Not always have three terms. For example:
Bukan sentiasa mempunyai tiga sebutan.
Sebagai contohnya:
$(4p+4)(3p-3)$
$= 12p^2 - 12$

10. (a) $4(3-4s)$
$= 12 - 16s$
(b) $5(4t-1)^2$
$= 5(16t^2 - 8t + 1)$
$= 80t^2 - 40t + 5$

11. (a) $4(4s-1)$
$= 16s - 4$
(b) $(q-3p)(q+3p) - 4q^2$
$= q^2 + 3pq - 3pq + 9p^2 - 4q^2$
$= q^2 + 9p^2 - 4q^2$
$= 9p^2 - 3q^2$

12. (a) $14s^2 + 4st$
$= 2s \times 7s + 2s \times 2t$
$= 2s(7s+2t)$
(b) $d^2 + 1(d-1) - (-2-d)$
$= d^2 + d - 1 + 2 + d$

$= d^2 + 2d + 1$
$= (d + 1)(d + 1)$

13. (a) $3p + 18pq$
$= 3p + 3p \times 6q$
$= 3p(1 + 6q)$
(b) $3m^2 - 3$
$= 3(m^2 - 1)$
$= 3(m - 1)(m + 1)$

14. $160 - 10d^2$
$= 10(16 - d^2)$
$= 10(4 - d)(4 + d)$

15. Factor of $6p^2q$:
Faktor bagi $6p^2q$*:*
1, 2, 3, 6, p, q, $2p$, $2q$, $3p$, $3q$, $6p$, $6q$, pq, $2pq$, $3pq$, $6pq$, p^2, $2p^2$, $3p^2$, $6p^2$, p^2q, $2p^2q$, $3p^2q$, $6p^2q$

Factor of $8pq^2$:
Faktor bagi $8pq^2$*:*
1, 2, 4, 8, p, q, $2p$, $2q$, $4p$, $4q$, $8p$, $8q$, pq, $2pq$, $4pq$, $8pq$, q^2, $2q^2$, $4q^2$, $8q^2$, pq^2, $2pq^2$, $4pq^2$, $8pq^2$

Common factor of $6p^2q$ and $8pq^2$:
Faktor sepunya bagi $6p^2q$ *dan* $8pq^2$*:*
1, 2, p, q, $2p$, $2q$, pq, $2pq$

The highest common factor is
Faktor sepunya terbesar ialah
$2pq$

16. Sample answer:
Contoh jawapan:

$3q^2 - 15q + 12$
$= (q - 4)(3q - 3)$

17. Sample answer:
Contoh jawapan:

The factor of 3 is 1, 3. So, (1×3) or $(-1 \times -3) = 3$.
Faktor bagi 3 ialah 1, 3. Maka, (1×3) *atau* $(-1 \times -3) = 3$.

$(s + 1)(s + 3) = s^2 + 4s + 3$
$(s - 1)(s - 3) = s^2 - 4s + 3$

18. (a) $3p - pq$
$= p(3 - q)$
(b) $4x - xy^2$
$= x(4 - y^2)$
$= x(2 + y)(2 - y)$

19. (a) $5p^2 - qp$
$= p(5p - q)$
(b) $st + 5t + 4s + 20$
$= (st + 5t) + (4s + 20)$
$= t(s + 5) + 4(s + 5)$
$= (s + 5)(t + 4)$

20. (a) $3p + 12$
$= 3(p + 4)$
(b) $5x^2 + 40x + 80$
$= 5(x^2 + 8x + 16)$
$= 5(x + 4)^2$

21. (i) $12x^2 + 10xy$
$= 2x \times 6x + 2x \times 5y$
$= 2x(6x + 5y)$
(ii) $k^2 + 2(k + 5) - (4 - 3k)$
$= k^2 + 2k + 10 - 4 + 3k$
$= k^2 + 5k + 6$
$= (k + 2)(k + 3)$
(iii) $5s^2 + 50s + 125$
$= 5(s^2 + 10s + 25)$
$= 5(s + 5)^2$

22. $\dfrac{4wx}{y^2 - z^2} \div \dfrac{2x}{y + z}$
$= \dfrac{4wx}{y^2 - z^2} \times \dfrac{y + z}{2x}$
$= \dfrac{4wx}{(y + z)(y - z)} \times \dfrac{y + z}{2x}$
$= \dfrac{4w}{y - z}$

23. $(2m^2n + 2mn) \times \dfrac{9}{1 + m}$
$= 2mn(m + 1) \times \dfrac{9}{1 + m}$
$= 18mn$

24. $\dfrac{3p + 2}{3p - 2} \times \dfrac{9p^2 - 4}{5}$
$= \dfrac{3p + 2}{3p - 2} \times \dfrac{(3p + 2)(3p - 2)}{5}$
$= \dfrac{(3p + 2)^2}{5}$

25. $\dfrac{4s}{t^2 - 1} \div \dfrac{3}{2s + 2st}$
$\dfrac{4s}{t^2 - 1} \times \dfrac{2s + 2st}{3}$
$= \dfrac{4s}{(t + 1)(t - 1)} \times \dfrac{2s(1 + t)}{3}$
$= \dfrac{8s^2}{3(t - 1)}$

26. $\dfrac{5p}{q^2 - 1} \div \dfrac{1}{2p + 2pq}$
$\dfrac{5p}{q^2 - 1} \times \dfrac{2p + 2pq}{1}$
$= \dfrac{5p}{(q + 1)(q - 1)} \times \dfrac{2p(1 + q)}{1}$
$= \dfrac{10p^2}{(q - 1)}$

BAB 3: RUMUS ALGEBRA

BAHAGIAN 1

1. $\frac{8(7x - 6y)}{5y + 2} = 5$

$8(7x - 6y) = 5(5y + 2)$
$56x - 48y = 25y + 10$
$56x = 25y + 48y + 10$
$56x = 73y + 10$
$x = \frac{73y + 10}{56}$

2. $\frac{8(7m - 4n)}{5n + 8} = 5$

$8(7m - 4n) = 5(5n + 8)$
$56m - 32n = 25n + 40$
$56m = 25n + 32n + 40$
$56m = 57n + 40$
$m = \frac{57n + 40}{56}$

3. $\frac{2p - 7}{2p + q} = 2$

$2p - 7 = 2(2p + q)$
$2p - 7 = 4p + 2q$
$2p - 4p = 2q + 7$
$-2p = 2q + 7$
$p = -\frac{2q + 7}{2}$

4. $\frac{m - 1}{4m + 7n} = 5$

$m - 1 = 5(4m + 7n)$
$m - 1 = 20m + 35n$
$m - 20m = 35n + 1$
$-19m = 35n + 1$
$m = -\frac{35n + 1}{19}$

5. $x = \frac{5y - 7xz}{9}$

$9x = 5y - 7xz$
$9x + 7xz = 5y$
$x(9 + 7z) = 5y$
$x = \frac{5y}{9 + 7z}$

6. $s = \frac{3t - 7su}{6}$

$6s = 3t - 7su$
$6s + 7su = 3t$
$s(6 + 7u) = 3t$
$s = \frac{3t}{6 + 7u}$

7. $81m^2 + 7 = 3n$

$81m^2 = 3n - 7$
$m^2 = \frac{3n - 7}{81}$
$m = \frac{\sqrt{3n - 7}}{9}$

8. $49m^2 + 3 = 3n$

$49m^2 = 3n - 3$
$m^2 = \frac{3n - 3}{49}$
$m = \frac{\sqrt{3n - 3}}{7}$

9. $x = 3; z = 4$

$1(4) = \frac{5y - 7(3)^2}{4(3)}$
$4 = \frac{5y - 63}{12}$
$4(12) = 5y - 63$
$48 = 5y - 63$
$5y = 48 + 63$
$5y = 111$
$y = \frac{111}{5}$

10. $p = 8; r = 6$

$1(6) = \frac{q - 1(8)^2}{9(8)}$
$6 = \frac{q - 64}{72}$
$6(72) = q - 64$
$432 = q - 64$
$q = 432 + 64$
$q = 496$

11. $5x = \frac{4y(2x - 3)}{y + 5}$

$5x(y + 5) = 4y(2x - 3)$
$5xy + 25x = 8xy - 12y$
$5xy + 25x - 8xy = -12y$
$-3xy + 25x = -12y$
$x(-3y + 25) = -12y$
$x = \frac{-12y}{-3y + 25}$

12. $Y = \frac{a(4b - 5c)}{4d}$

$4Yd = a(4b - 5c)$
$\frac{4Yd}{a} = 4b - 5c$
$\frac{4Yd}{a} + 5c = 4b$
$4b = \frac{4Yd + 5ac}{a}$
$b = \frac{4Yd + 5ac}{4a}$

13. $C = \frac{a(4b + c)}{4d}$

$4Cd = a(4b + c)$
$\frac{4Cd}{a} = 4b + c$

$\frac{4Cd}{a} - c = 4b$

$4b = \frac{4Cd - ac}{a}$

$b = \frac{4Cd - ac}{4a}$

14. $3p = \frac{4q}{\sqrt{r}}$

$3p(\sqrt{r}) = 4q$

$\sqrt{r} = \frac{4q}{3p}$

$r = \frac{16q^2}{9p^2}$

15. $a - 5 = \frac{4b}{c^2}$

$a - 5 = \frac{4(4)}{2^2}$

$a - 5 = \frac{16}{4}$

$a - 5 = 4$

$a = 4 + 5$

$a = 9$

16. $B = \frac{5d + d^3}{9}$

$B = \frac{5(5) + (5)^3}{9}$

$B = \frac{150}{9}$

$B = \frac{50}{3}$

17. $2p = 3pq + 3$

$3pq = 2p - 3$

$q = \frac{2p - 3}{3p}$

18. $\frac{\sqrt{p + q}}{2} = 3r$

$\sqrt{p + q} = 6r$

$(\sqrt{p + q})^2 = (6r)^2$

$p + q = 36r^2$

$q = 36r^2 - p$

19. $\frac{x^2 - 9}{2} = p$

$x^2 - 9 = 2p$

$x^2 = 2p + 9$

$x = \sqrt{2p + 9}$

20. (i) $\frac{\sqrt{5s + 3t}}{5} = u$

$\sqrt{5s + 3t} = 5u$

$(\sqrt{5s + 3t})^2 = (5u)^2$

$5s + 3t = 25u^2$

$3t = 25u^2 - 5s$

$3t = 5(5u^2 - s)$

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

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

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

$t = 30$

BAHAGIAN 2

1 A	**2** A	**3** A	**4** D	**5** A
6 B	**7** C	**8** D	**9** A	**10** B
11 C	**12** C	**13** C	**14** A	**15** B
16 B	**17** C	**18** D	**19** D	**20** A

KHAS UNTUK ANDA!

Setiap manusia diberikan kemampuan dan keistimewaan tersendiri. Tiada seorangpun anak yang dilahirkan didunia ini adalah lemah, lembab atau tidak pandai dalam matematik.

Yang membezakan antara anak yang cemerlang dan kurang cemerlang dalam subjek matematik ialah, anak-anak yang cemerlang ini sudahpun mempunyai ***satu sistem, strategi, kaedah dan teknik*** yang berkesan, manakala anak yang lemah Matematik **BELUM** lagi menjumpai teknik atau strategi yang berkesan dan sesuai dengan dirinya lagi.

Teruskan mencari, sampai masanya pasti akan menjumpai juga. Walaupun masa hanya tingga beberapa bulan, bahkan beberapa minggu sekalipun pelajar pada usia ini masih mampu mempelajari matematik dengan pantas apabila sudah menjumpai teknik yang sesuai dengan dirinya.

Jika pelajar-pelajar lalu mampu mengubah gred penacapain matematik mereka dengan pantas kenapa tidak anda? Lihat Disini komen-komen pencapaian mereka yang lalu http://www.mathscatch.com/casestudy.php

Diharapkan modul ini menjadi pemangkin untuk anda membuat langkah pertama mengubah gred pencapaian matematik masing-masing. ***"Kata Orang tua-tua, perjalananan yang beribu batu jauhnya, bermula dengan satu langkah"***. Mulakan langkah anda sekarang, mudah-mudahan ianya menjadi satu langkahan yang besar dalam kehidupan anda di kemudian hari.

Ikhlas,

#Cikgu Rajaei Ali
#MathsCatch
#SeminarIntensifMatematik (SIM)

Saya juga kongsi tips dan bahan matematik sekolah rendah dan menengah secara percuma setiap hari di telegram channel disini https://t.me/ParentingMathsCgRajaei

LAMPIRAN 1

NAK KAMI BANTU SUPAYA ANAK ANDA LEBIH MINAT, TERUJA & GHAIRAH DENGAN MATEMATIK?

SERTAI KAMI

Dengan mendaftar nama anak di mana-mana cawangan pusat tuisyen matematik Maths Catch. (Pusat tuisyen khusus untuk matematik sahaja)

Wassap untuk dapatkan jadual terkini

LEMBAH KLANG

1.Maths Catch Shah Alam (Seksyen 7) HQ – Office
2.Maths Catch Shah Alam (Seksyen 20) 0173321095
3.Maths Catch Puchong (Taman Tasik Prima) 010 336 3700
4.Maths Catch USJ (Taipan) 011 2702 0234
5.Maths Catch Setia Alam 011 16530101

Tuisyen Khas Matematik ini sangat sesuai ibu bapa yang ada anak tak minat matematik, masih lemah asas,selalu cakap matematik ni susah dan bagi ibu bapa yang nak bagi pengalaman kat anak belajar matematik cara yang betul di MathsCatch

JOHOR

6.Maths Catch Taman Impian Emas (JB) 016 714 3924
7.Maths Catch Ulu Tiram (Taman Gaya) 011 1693 6117 /010 885 1874
8.Maths Catch Larkin Idaman 018 773 4438
9.Maths Catch Pasir Gudang 011 1693 6117 / 010 885 1874

PENANG/KEDAH

10.Maths Catch Bertam Perdana (Penang) 011 3604 4468 / 019 239 9950

Dapatkan Info & Pertanyaan Di Telegram Channel Khas Disini
www.mathscatch.com/teletuisyen

RUMAH JAUH?

DAPATKAN PANDUAN LENGKAP MATEMATIK MATHS CATCH 2020 DALAM DWIBAHASA YANG TIDAK DIJUAL DIMANA-MANA KEDAI BUKU EKSKLUSIF SECARA ONLINE SAHAJA DISINI:

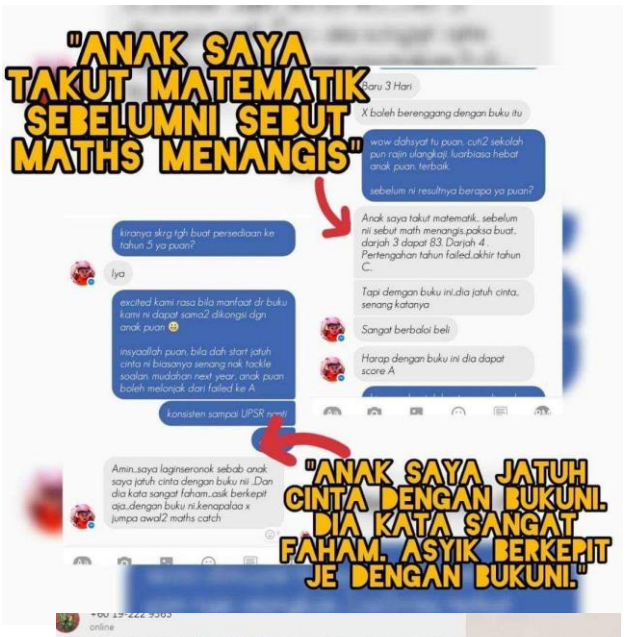
http://mathscatch.com/panduanlengkap

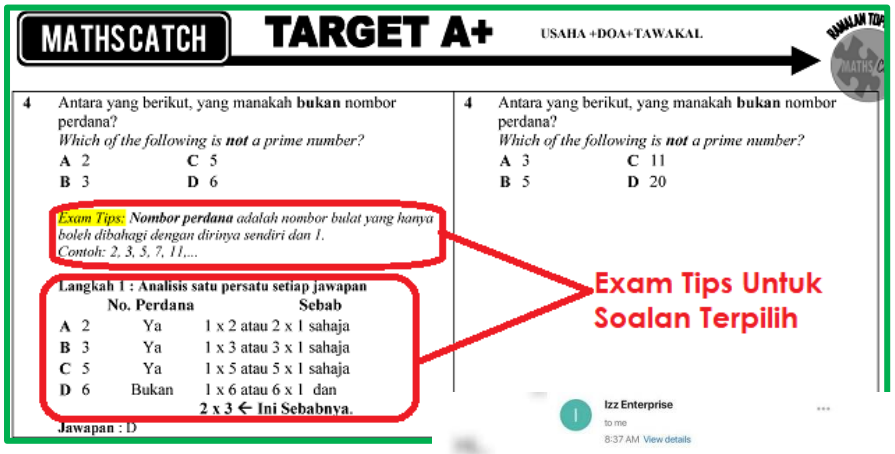
PANDUAN LENGKAP MATEMATIK 2020

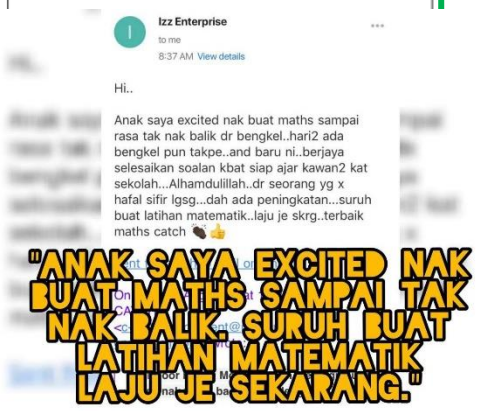
Panduan Lengkap ASAS MATEMATIK	Panduan Lengkap ASAS PECAHAN	Panduan Lengkap TOPIKAL (UTAMA)	Panduan Lengkap PEPERIKSAAN	Panduan Lengkap KBAT

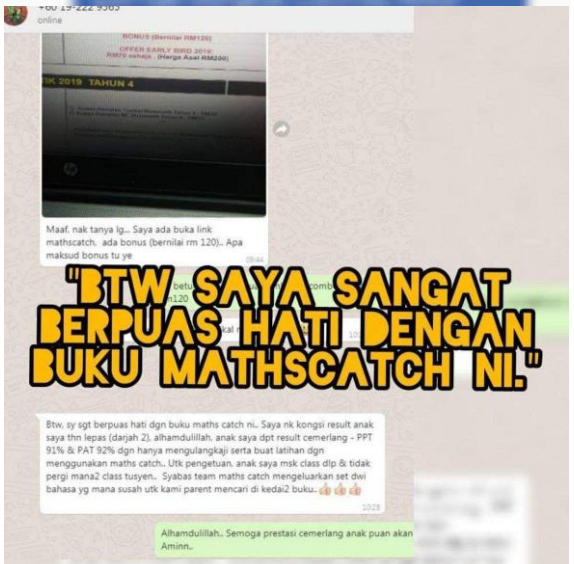
Keistimewaan Modul Maths Catch

1. Modul dalam Dwibahasa.
2. Jawapan dan jalan pengiraan Langkah demi Langkah disediakan
3. Jumlah soalan yang banyak lebih dari 3000 soalan, cukup untuk digunakan secara berulang-ulang selama setahun.
4. Modul yang Lengkap dari Aras rendah, asas hingga ke aras tinggi.
5. Menjadi Trend yang dipercayai sejak 2010 dan modul matematik pilihan utama ibu bapa moden masa kini.
6. Tidak dijual dimana-mana kedai buku, ekslusif secara online sahaja.









SOALAN MATHS PERCUMA

Dapatkan lebih banyak tips peperiksaan, soalan ramalan terkini, soalan percubaan yang lepas-lepas, cadangan tajuk dan bab ketika hampir peperiksaan dan lain-lain di Telegram Channel Maths Catch dibawah

https://t.me/ParentingMathsCgRajaei