MATEMATIK

NAMA : _____
SEKOLAH : _____

PUSAT TUISYEN MATEMATIK MATHS CATCH

Professional Maths Centre
MATHS CATCH

SOALAN PERCUBAAN MATEMATIK PT3
(PT3 2019)

1 Jam Dua Jam

MATEMATIK
PT3
Dua Jam

JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIBERITAHU

1. *Kertas soalan ini mengandungi* **3 bahagian** *soalan.*
2. *Jawab* **semua** *soalan.*

050

Kertas soalan ini mengandungi 24 halaman bercetak

FORMAT PT3

PERBEZAAN:

- PT3 Format Baharu

2015 – 2018	Mulai 2019
1 Kertas, 2 Jam 10 soalan (a) Soalan mudah / *direct* – 4 Markah (b) Soalan sederhana mudah – 2 Markah (c) Soalan struktur / KBAT – 4 Markah Markah Lulus : 40%	1 Kertas, 2 Jam Bahagian A : • 20 Soalan OBJEKTIF ANEKA PILIHAN • 20 Markah Bahagian B : • 5 Soalan OBJEKTIF BERPANDU • 20 Markah [1 soalan 4 Markah] Bahagian C • 6 Soalan STRUKTUR RESPON TERHAD • 60 Markah [1 soalan 10 markah]

PERSAMAAN:

- Tiada tajuk khusus untuk setiap bahagian (tidak boleh buat ramalan)
- KBAT diterapkan secara intensif

Bentuk soalan yang boleh disoal di dalam Bahagian B

1. Suaikan yang betul
2. Tanda (√) atau (×)
3. Isi tempat kosong
4. Senaraikan
5. Lengkapkan rajah
6. Lukiskan bentangan / Lukis lokus
7. Gariskan jawapan yang betul
8. Susun langkah / urutan
9. Dan lain-lain yang bersesuaian.

RUMUS MATEMATIK / MATHEMATICAL FORMULAE
TINGKATAN 1

The following formulae may be helpful in answering the questions. The symbols given are the ones commonly used.
Rumus-rumus berikut boleh membantu anda menjawab soalan. Simbol-simbol yang diberi adalah yang biasa digunakan.

BENTUK DAN RUANG / SHAPES AND SPACE

1.Area of rectangle = Length × Width /
Luas segi empat tepat = Panjang × Lebar

2.Area of triangle $= \frac{1}{2} \times$ Base × Height /
Luas segi tiga $= \frac{1}{2} \times$ *Tapak* × *Tinggi*

3.Area of parallelogram = Base × Height /
Luas segi empat selari = Tapak × *Tinggi*

4.Area of trapezium = $\frac{1}{2} \times$ sum of parallel sides × height /
Luas trapezium= $\frac{1}{2} \times$ *hasil tambah dua sisi selari* × *tinggi*

5.Sum of interior angles of polygon = $(n-2) \times 180^o$
Hasil tambah sudut pedalaman polygon = $(n-2) \times 180^o$

PERKAITAN / RELATIONS

1. Pythagoras' Theorem / *Teorem Pythagoras*
$c^2 = a^2 + b^2$

RUMUS MATEMATIK / MATHEMATICAL FORMULAE
TINGKATAN 2

BENTUK DAN RUANG / SHAPES AND SPACE

1. Area of rectangle = Length × Width / *Luas segi empat tepat = Panjang × Lebar*

2. Area of triangle $= \frac{1}{2} \times$ Base × Height / *Luas segi tiga* $= \frac{1}{2} \times$ *Tapak × Tinggi*

3. Area of parallelogram = Base × Height / *Luas segi empat selari = Tapak × Tinggi*

4. Area of trapezium = $\frac{1}{2} \times$ sum of parallel sides × height = $\frac{1}{2} \times$ *hasil tambah dua sisi selari × tinggi*

5. Circumference of circle = $\pi d = 2\pi r$ / *Lilitan bulatan* = $\pi d = 2\pi j$

6. Area of circle = πr^2 / *Luas bulatan* = πj^2

7. Curved surface area of cylinder = $2\pi rh$ / *Luas permukaan melengkung silinder* = $2\pi jt$

8. Surface area of sphere = $4\pi r^2$ / *Luas permukaan sfera* = $4\pi j^2$

9. Volume of right prism = cross sectional area × length
Isipadu prisma tegak = luas keratan rentas × panjang

10. Volume of cuboid = Length × Width × Height
Isipadu kuboid = Panjang × Lebar × Tinggi

11. Volume of cylinder = $\pi r^2 h$ / *Isipadu silinder* = $\pi j^2 t$

12. Volume of cone = $\frac{1}{3}\pi r^2 h$ / *Isipadu kon* = $\frac{1}{3}\pi j^2 t$

13. Volume of sphere = $\frac{4}{3}\pi r^3$ / *Isipadu sfera* = $\frac{4}{3}\pi j^3$

14. Volume of right pyramid = $\frac{1}{3} \times$ base area × height

Isipadu piramid tegak = $\frac{1}{3} \times$ *luas tapak × tinggi*

15. Sum of interior angles of polygon = $(n-2)\times 180^o$
Hasil tambah sudut pedalaman polygon = $(n-2)\times 180^o$

16. $\frac{\text{arc length}}{\text{circumference of circle}} = \frac{\text{angle subtended at centre}}{360°}$

$\frac{\textit{panjang lengkok}}{\textit{lilitan bulatan}} = \frac{\textit{sudut pusat}}{360°}$

17. $\frac{\text{area of sector}}{\text{area of circle}} = \frac{\text{angle subtended at centre}}{360°}$

$\frac{\textit{luas sektor}}{\textit{luas bulatan}} = \frac{\textit{sudut pusat}}{360°}$

PERKAITAN

1. Distance / *JaraK* = $\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$

2. Midpoint / *Titik tengah* $(x, y) = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$

3. Average speed = Distance traveled / Time taken

   Purata laju = $\frac{\textit{Jarak yang dilalui}}{\textit{Masa yang diambil}}$

4. Mean = sum of data / number of data

   Min = *hasil tambah nilai data* / *bilangan data*

5. Mean = sum of (classmark × frequency) / sum of frequencies

   Min = *hasil tambah (nilai titik tengah kelas* × *kekerapan)* / *hasil tambah kekerapan*

6. Probability of an event / *Kebarangkalian suatu peristiwa*

$$P(A) = \frac{n(A)}{n(S)}$$

7. Complement of an event / Peristiwa Pelengkap

$$P(A') = 1 - P(A)$$

8. Gradient, m = $\frac{\text{vertical distance}}{\text{horizontal distance}}$ / *Kecerunan*, $m = \frac{\textit{jarak mencancang}}{\textit{jarakmengufuk}}$

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

FORMULA MATEMATIK TINGKATAN 3

BENTUK DAN RUANG / SHAPES AND SPACE

1. Scale factor, $k = \frac{PA'}{PA}$

   Faktor skala, $k = \frac{PA'}{PA}$

2. Area of image = $k^2 \times$ area of object

   Luas imej $= k^2 \times$ *luas objek*

PERKAITAN

1. $a^m \times a^n = a^{m+n}$
2. $a^m \div a^n = a^{m-n}$
3. $(a^m)^n = a^{mn}$

4. Gradient, m = $\frac{\text{vertical distance}}{\text{horizontal distance}}$ / *Kecerunan,* $m = \frac{jarak\ mencancang}{jarakmengufuk}$

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

5. m = $-\frac{y\text{-intercept}}{x\text{-intercept}}$ /

   m = $-\frac{pintasan\text{-}y}{pintasan\text{-}x}$

6. $I = Prt$
7. $MV = P\left(1 + \frac{r}{n}\right)^{nt}$
8. $A = P + Prt$

Answers **all** questions.
*Jawab **semua** soalan.*

Section A
Bahagian A
[20 marks/*markah*]

1 Which of the following groups of fractions is arranged in descending order?
Antara kumpulan pecahan yang berikut, yang manakah disusun mengikut tertib menurun?

A $\frac{1}{6}, \frac{2}{5}, \frac{2}{3}$ **C** $\frac{2}{9}, \frac{3}{9}, \frac{1}{3}$

B $\frac{1}{2}, \frac{1}{3}, \frac{1}{4}$ **D** $\frac{2}{5}, \frac{3}{10}, \frac{3}{5}$

2 Find the lowest common multiple (LCM) of 16 and 40.
Cari gandaan sepunya terkecil (GSTK) bagi 16 dan 40.

A 12 **C** 70
B 30 **D** 80

3 Schools X, Y and Z are provided with text books in a ratio of 5 : 4 : 7. The total number of textbooks are 4 000. If school X gave 300 books to school Y and school Y received 250 books from school Z after the distribution of the textbooks, what is the ratio of the number of textbooks in schools X, Y and Z?
Sekolah X, Y and Z mendapat peruntukan buku teks mengikut nisbah 5 : 4 : 7. Jumlah buku teks ialah 4 000 buah. Jika sekolah X memberi 300 buah buku kepada sekolah Y dan sekolah Y menerima 250 buah buku daripada sekolah Z selepas pengagihan tersebut, berapakah nisbah bilangan buku teks di sekolah X , Y dan Z?

A 19 : 26 : 30 **C** 19 : 31 : 30
B 19 : 29 : 30 **D** 19 : 31 : 29

4 In Diagram 1, PTR and QTS are straight lines.
Dalam Rajah 1, PTR dan QTS ialah garis lurus.

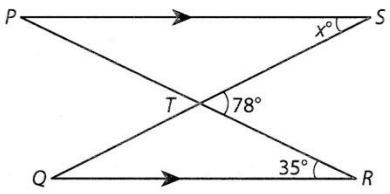


Diagram 1
Rajah 1

The value of x is
Nilai bagi x ialah

A 35 **C** 78
B 43 **D** 102

5 How many multiples of 24 that are less than 100?
Berapakah bilangan gandaan 24 yang kurang daripada 100?

A 3 **C** 5
B 4 **D** 6

6 The total surface area of a cuboid is given by the formula $A = 2x^2 + 4xy$. Find the value of A when $x = 4$ and $y = 7$.
Jumlah luas permukaan sebuah kuboid diberi oleh rumus $A = 2x^2 + 4xy$. Cari nilai A apabila $x = 4$ dan $y = 7$.

A 120
B 128
C 144
D 178

7 Diagram 2 shows a sector of a circle with a radius of 14 cm.
Rajah 2 menunjukkan sebuah sektor bulatan yang berjejari 14 cm.

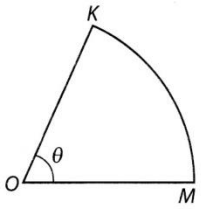


Diagram 2
Rajah 2

Given the length of the arc KM is $14\frac{2}{3}$ cm. Find the value of θ.
Diberi panjang lengkok KM ialah $14\frac{2}{3}$ cm. Cari nilai θ.
$\left[\text{Use/}Guna\ \pi = \frac{22}{7}\right]$

A 60 **C** 80
B 70 **D** 85

8 Calculate the distance, in units, between the points $K(1, 10)$ and $L(7,2)$.
Hitung jarak, dalam unit, di antara titik $K(1, 10)$ dan $L(7,2)$.

A 6 **C** 10
B 8 **D** 12

9 Diagram 3 shows a straight line *KL* drawn on a Cartesian plane.
Rajah 3 menunjukkan garis lurus KL dilukis pada satu satah Cartes.

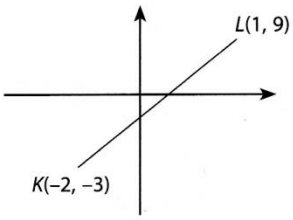


Diagram 3
Rajah 3

The gradient of a straight line *KL* is
Kecerunan bagi garis lurus KL ialah

A -4 **C** $\frac{1}{4}$

B $-\frac{1}{4}$ **D** 4

10 A box contains 6 apples, 4 mangoes and a number of oranges. A mango is chosen at random from the box. The probability of getting a mango is $\frac{2}{9}$. Find the number of oranges in the box.
Sebuah kotak mengandungi 6 biji epal, 4 biji mangga dan beberapa biji oren. Sebiji mangga dipilih secara rawak daripada kotak itu. Kebarangkalian mendapat mangga ialah $\frac{2}{9}$. Cari bilangan oren dalam kotak itu.

A 5 **C** 7

B 6 **D** 8

11 Express 0.000647 in standard form.
Ungkapkan 0.000647 dalam bentuk piawai.

A 6.47×10^{-3}

B 6.47×10^{-4}

C 6.47×10^{3}

D 6.47×10^{4}

12 Cik Ammy bought unit trusts worth RM10 000. After two years, Cik Ammy sold all the unit trusts. She received RM10 600. During two years of holding the unit trusts, she received RM800 dividend. Calculate the return on investment by Cik Ammy.
Cik Ammy membeli saham unit amanah sebanyak RM10 000. Selepas dua tahun, Cik Ammy menjual kesemua saham unit amanahnya. Dia menerima RM10 600. Sepanjang dua tahun memegang saham, dia menerima dividen sebanyak RM800. Hitung nilai pulangan pelaburan Cik Ammy.

A 6% **C** 12%

B 8% **D** 14%

13 Diagram 4 shows a composite solid consisting of two identical cones.
Rajah 4 menunjukkan sebuah pepejal gabungan yang terdiri daripada dua buah kon yang sama.

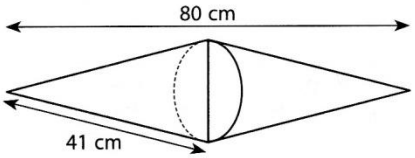


Diagram 4
Rajah 4

Find the total surface area, in cm^2, of the solid.
Cari jumlah luas permukaan, dalam cm^2, pepejal itu.
$\left[\text{Use/}Guna\ \pi = \frac{22}{7}\right]$

A $643\frac{1}{2}$ **C** $1\,414\frac{2}{7}$

B 1 188 **D** 2 088

14 In Diagram 5, *O* is the centre of the circle.
Dalam Rajah 5, O ialah pusat bulatan.

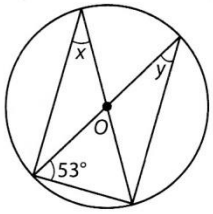


Diagram 5
Rajah 5

Find the value of $x + y$.
Cari nilai $x + y$.

A 37 **C** 74

B 53 **D** 90

15 Simplify/*Pemudahkan* $\frac{p^2 - q^2}{(p + q)}$.

A $p + q$ **C** $\frac{(p - q)}{(p + q)}$

B $p - q$ **D** $\frac{(p - q)^2}{(p + q)^2}$

16 Stem-and-leaf plot in Diagram 6 shows the time, in minutes, taken by the students of Form 3 to answer 40 questions in a Mathematics quiz.
Plot batang-dan-daun dalam Rajah 6 menunjukkan masa, dalam minit, yang diambil oleh pelajar Tingkatan 3 untuk menjawab 40 soalan dalam satu kuiz Matematik.

Time taken/*Masa yang diambil*

Stem *Batang*	Leaf *Daun*
1	5 6 7 8 9 9
2	4 5 6 7 9
3	2 5 7 7

Key: 1|7 means 17 minutes
Kekunci: 1|7 bermaksud 17 minit

Diagram 6
Rajah 6

If the number of students obtained 80 marks and above is 60%, calculate the number of students.
Jika bilangan pelajar yang memperoleh 80 markah ke atas ialah 60%, hitung bilangan murid itu.

A 7 **C** 10
B 9 **D** 11

17 Diagram 7 shows a composite solid consists of a cone and cuboid.
Rajah 7 menunjukkan pepejal gabungan sebuah kon dan kuboid.

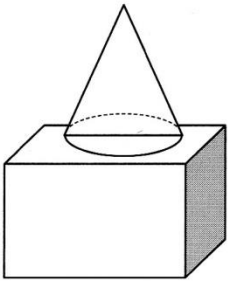
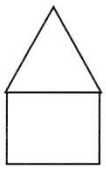
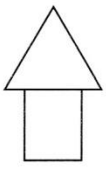
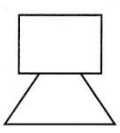


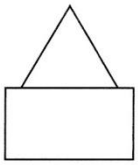
Diagram 7
Rajah 7

Which of the following is the correct plan side elevation?
Antara yang berikut, yang manakah pelan dongakan sisi yang betul?

A


C


B


D


18 Diagram 8 shows a fan. When the fan is switched on, part of the locus of the moving point *P* is

Rajah 8 menunjukkan sebuah kipas. Apabila suis kipas dihidupkan, sebahagian daripada lokus bagi titik P yang bergerak ialah

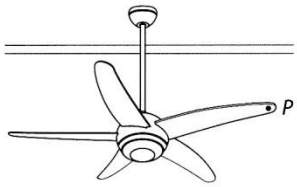


Diagram 8
Rajah 8

A the arc/*lengkok*
B the circle/*bulatan*
C the straight line/*garis lurus*
D equidistant/*sama jarak*

19 Diagram 9 shows a right-angled triangle.
Rajah 9 menunjukkan segi tiga bersudut tegak.

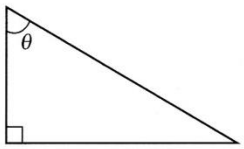


Diagram 9
Rajah 9

Given $\sin\theta = \frac{12}{13}$, Find the value of $\tan\theta$.
Diberi $\sin\theta = \frac{12}{13}$, *Cari nilai* $\tan\theta$.

A $\frac{5}{12}$ **C** $\frac{12}{5}$
B $\frac{5}{13}$ **D** $\frac{12}{13}$

20 Table 1 shows the temperatures, in °C, recorded in a particular month.
Jadual 1 menunjukkan suhu, °C, yang dicatatkan dalam suatu bulan tertentu.

Temperature *Suhu* (°C)	**Frequency** *Kekerapan*
21 – 25	7
26 – 30	9
31 – 35	8
36 – 40	6

Table 1
Jadual 1

Calculate the mean.
Hitung min.

A 30.17 **C** 32.17
B 31.17 **D** 33.17

Bahagian B

[20 *markah*]

Jawab **semua** soalan.

1 Dalam ruang jawapan, tandakan (✓) bagi persamaan linear dalam dua pemboleh ubah.
In the answer space, mark (✓) for linear equation in two variables.

[4 markah/ *marks*]

Jawapan/ *Answer*:

$2g + 3h = 8$		$p - 2q^2 = 12$	
$3x + \frac{1}{y} = 9$		$\frac{1}{2}m - \frac{4}{3}n = 6$	
$7x - 8 = 6y$		$\frac{p}{9} = 3q + 5$	

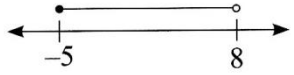
2 Pada ruang jawapan, pilih *P*, *Q*, *R* atau *S* yang mewakili setiap garis nombor berikut.
In the answer space, choose P, Q, R or S which represents each of the number lines.

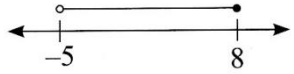
$-5 \leqslant x \leqslant 8$	$-5 < x < 8$	$-5 \leqslant x < 8$	$-5 < x \leqslant 8$
P	*Q*	*R*	*S*

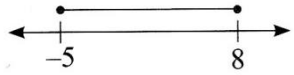
[4 markah/ *marks*]

Jawapan/ *Answer*:

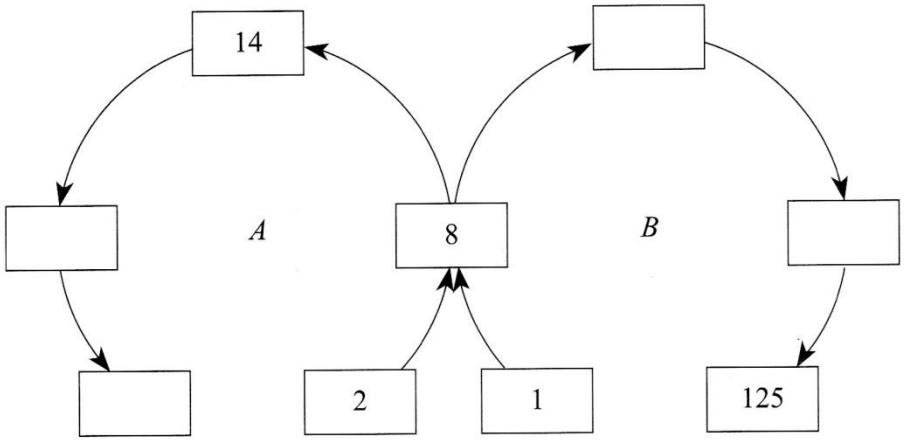
(*a*) 

(*b*) 

(*c*) 

(*d*) 

3 Rajah menunjukkan dua urutan nombor, *A* dan *B*.
Diagram shows two number sequences, A and B.



Isikan kotak tersebut dengan jawapan yang betul untuk melengkapkan urutan itu.
Fill in the boxes with the correct answer to complete the sequence.

[4 markah/ *marks*]

4 (*a*) Tandakan (✓) objek yang mempunyai simetri putaran dan (✗) objek yang tidak mempunyai simetri putaran.
Mark (✓) the object which has rotational symmetry and (✗) the object which has no rotational symmetry.

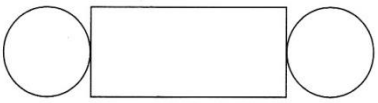
(i)

(ii)

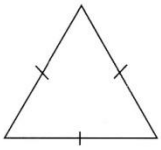
[2 markah/ *marks*]

(*b*) Tentukan peringkat simetri putaran bagi setiap rajah berikut.
Determine the order of rotational symmetry for each of the following objects.

(i)



(ii)

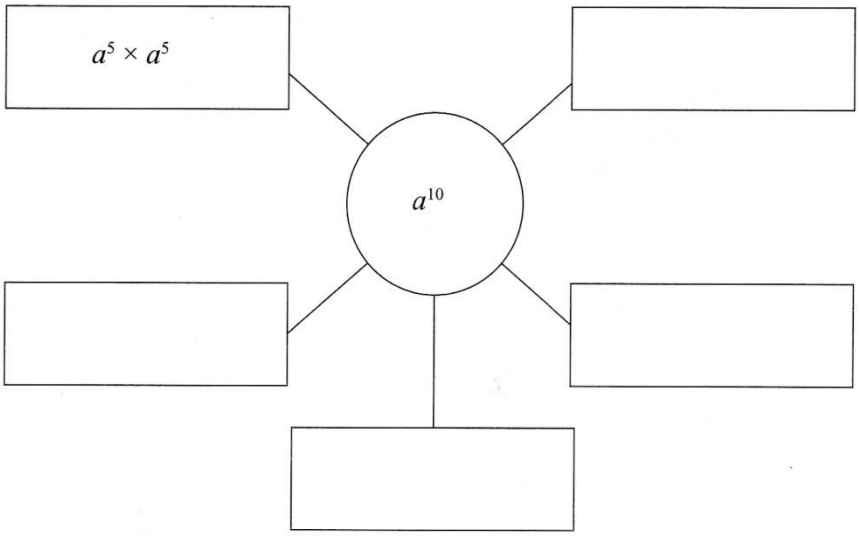


[2 markah/ *marks*]

5 Rajah menunjukkan indeks di dalam segi empat tepat.
Diagram shows indices in a rectangle.

$\frac{a^{-3}}{a^7}$	$\frac{a^8}{a^{-2}}$	$a^5 \times a^5$	$a^{20} \div a^2$
$a^{16} \div a^6$	$(a^5)^2$	$a^5 \times a^2$	$a^{13} \times a^{-3}$

Berdasarkan contoh yang diberi, isikan jawapan dalam petak berikut.
Based on the given example, fill in the answer in the following boxes.



[4 markah/ *marks*]

BAHAGIAN C / SECTION C
(60 Markah / Marks)

Jawab **semua** soalan.
Answer **all** questions.

QUESTION 1 / SOALAN 1

(a) Jisim sebungkus tepung ialah 2 kg 250g. Jisim seketul mentega ialah $\frac{2}{5}$ daripada jisim sepeket tepung. Jisim sepeket gula adalah dua kali ganda jisim seketul mentega. Hitung jumlah jisim, dalam kg, bagi seketul mentega dan sepeket gula.

The mass of a packet of flour is 2 kg 250 g. *The mass of a piece of butter is* $\frac{2}{5}$ *of the mass of a packet of flour. The mass of a packet of sugar is twice of the mass of a piece of butter. Calculate the total mass, in* kg, *of a piece of butter and a packet of sugar.*

[3 markah/*marks*]

Jawapan / *Answer*:

(b) Sebuah kotak mempunyai 40 biji guli merah and x biji guli biru. Jika sebiji guli dipilih secara rawak, kebarangkalian memilih sebiji guli biru ialah $\frac{1}{3}$.

A box contains 40 *red marbles and x blue marbles. If a marble is chosen at random, the probability of choosing a blue marble is* $\frac{1}{3}$.

(i) Cari nilai x.

Find the value of x.

(ii) Sebilangan guli biru ditambah ke dalam kotak itu dan kebarangkalian memilih sebiji guli merah ialah 0.5. Cari bilangan guli biru yang ditambah.

A few blue marbles are added into the box and the probability of selecting a red marble is 0.5. *Find the number of blue marbles added.*

[4 markah/*marks*]

Jawapan / *Answer*:

(c) Sebuah bas bergerak dari Bandaraya *X* ke Bandaraya *Y* dengan laju purata 80 km j^{-1} selama 2 jam 15 minit. Kemudian ia bergerak dari Bandaraya *Y* ke Bandaraya *Z* yang berjarak 120 km selama 1 jam 45 minit. Hitung laju purata, dalam km j^{-1}, bagi bas itu dari Bandaraya *X* ke Bandaraya *Z*.

A bus moved from City X to City Y with an average speed of 80 km h^{-1} *for* 2 hours 15 minutes. *Then it moved from City Y to City Z which are* 120 km *apart for* 1 hour 45 minutes. *Calculate the average speed, in* km h^{-1}, *of the bus from City X to City Z.*

[3 markah/*marks*]

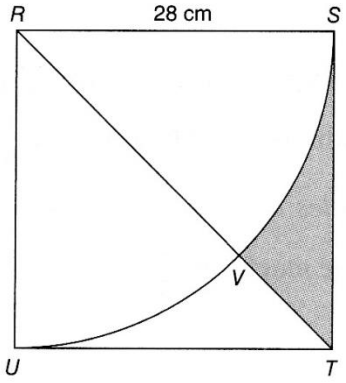
Jawapan / *Answer*:

QUESTION 2 / SOALAN 2

(a) Dalam rajah, *RSTU* ialah sebuah segi empat sama dan *RSVU* ialah sukuan bulatan dengan pusat *R*. Hitung luas, dalam cm^2, bagi kawasan berlorek.

In the diagram, RSTU is a square and RSVU is a quadrant of a circle with centre R. Calculate the area, in cm^2*, of the shaded region.*

$\left(\text{Guna/ } Use\ \pi = \frac{22}{7}\right)$

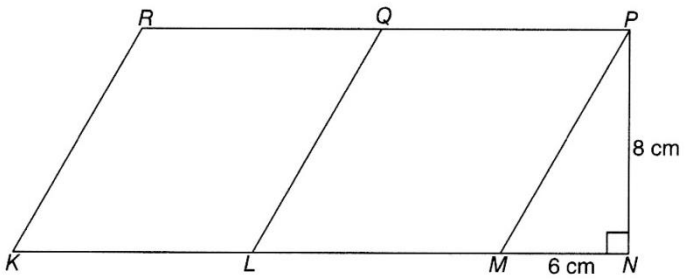


[3 markah/*marks*]

Jawapan / *Answer*:

(b) Rajah menunjukkan dua rombus, *KLQR* dan *LMPQ*, dan sebuah segi tiga bersudut tegak *MNP*. *PQR* dan *KLMN* ialah garis lurus. Hitung luas, dalam cm^2, bagi seluruh rajah.

The diagram shows two rhombuses, KLQR and LMPQ, and a right-angled triangle MNP. PQR and KLMN are straight lines. Calculate the area, in cm^2*, of the whole diagram.*



[3 markah/*marks*]

(c) Rajah di ruang jawapan menunjukkan sebuah segi tiga sama sisi *ABC*. *D* dan *E* masing-masing ialah titik tengah *AC* dan *AB*. *X*, *Y* dan *Z* ialah tiga titik yang bergerak di dalam rajah itu.

The diagram in the answer space shows an equilateral triangle ABC. D and E are the midpoints of AC and AB respectively. X, Y and Z are three moving points in the diagram.

(i) *X* bergerak dengan keadaan jaraknya dari garis lurus *AC* dan *BC* adalah sama. Dengan menggunakan huruf abjad pada rajah itu, nyatakan lokus *X*.

X moves such that it is equidistant from the straight lines AC and BC. By using the letters in the diagram, state the locus of X.

(ii) Pada rajah itu, lukis

On the diagram, draw

(a) lokus *Y* dengan keadaan $YB = 3$ cm,

the locus of Y such that $YB = 3$ cm,

(b) lokus *Z* dengan keadaan $\angle ABZ = \angle ZBC$,

the locus of Z such that $\angle ABZ = \angle ZBC$,

(c) seterusnya, tandakan dengan simbol ⊗ bagi kedudukan titik persilangan lokus *Y* dan lokus *Z* itu.

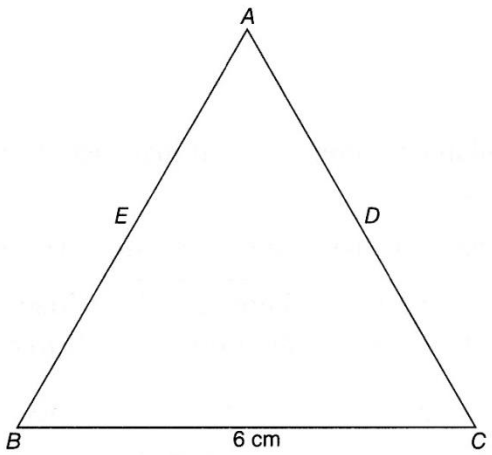
hence, mark with the symbol ⊗ the intersection of the locus of Y and the locus of Z.

[4 markah/*marks*]

Jawapan / *Answer*:

(i) _____

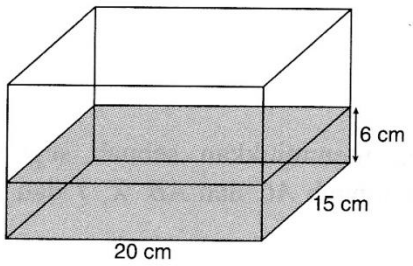
(ii) (a), (b), (c)



QUESTION 3 / SOALAN 3

(a) Rajah menunjukkan sebuah akuarium yang berbentuk kuboid. Sebahagian darinya diisikan air.

The diagram shows an aquarium in the shape of a cuboid. It is partially filled with water.



Jika air dalam akuarium adalah 40% daripada isi padunya, hitung isi padu air, dalam cm^3, yang diperlukan untuk mengisi sehingga penuh akuarium itu.

If the water in the aquarium is 40% of its volume, calculate the volume of water, in cm^3, *that is needed to fill up the aquarium.*

[4 markah/*marks*]

Jawapan / *Answer*:

(b) (i) Permudahkan/ *Simplify* $\dfrac{p^{-3} \times p^{8}}{p^{-6}}$.

(ii) Cari nilai bagi $5^{\frac{2}{3}} \times 10^{\frac{1}{3}} \times 4^{\frac{1}{3}}$.

Find the value of $5^{\frac{2}{3}} \times 10^{\frac{1}{3}} \times 4^{\frac{1}{3}}$.

[3 markah/*marks*]

Jawapan / *Answer*:

(c) Jadual menunjukkan bilangan kereta yang dijual oleh Syarikat TGL dalam 5 bulan yang pertama pada tahun 2014.

The table shows the number of cars sold by Company TGL in the first 5 *months of year* 2014.

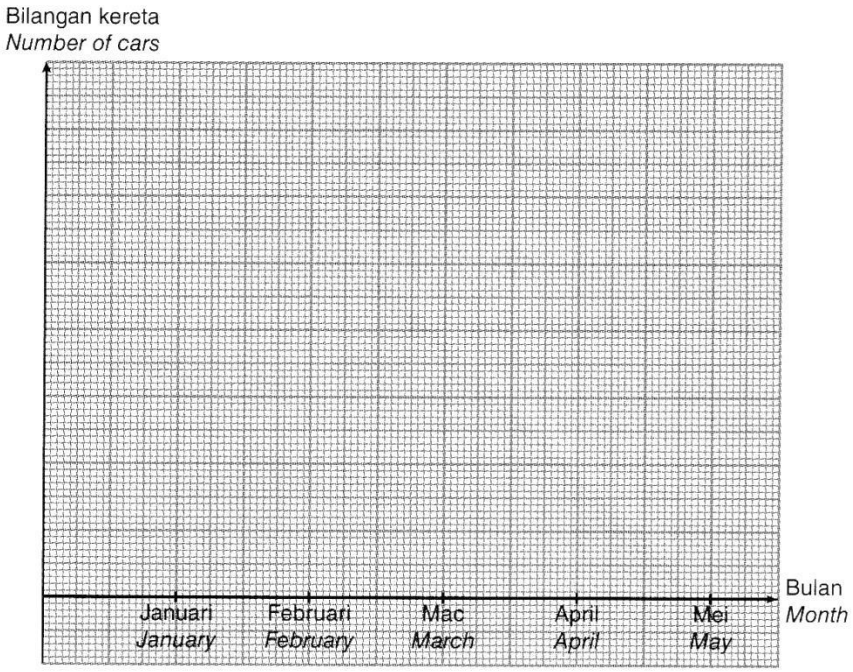
Bulan ***Month***	Januari *January*	Februari *February*	Mac *March*	April *April*	Mei *May*
Bilangan kereta ***Number of cars***	40	35	50	42	70

Pada rajah di ruang jawapan, lukis satu graf garis untuk mewakili semua maklumat dalam jadual. Gunakan skala 2 cm kepada 10 buah kereta pada paksi mencancang.

On the diagram in the answer space, draw a line graph to represent all the information in the table. Use a scale of 2 cm *to* 10 *cars on the vertical axis.*

[4 markah/*marks*]

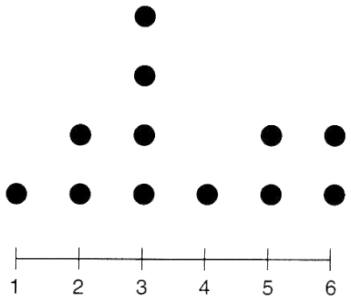
Jawapan / *Answer*:



QUESTION 4 / SOALAN 4

(a) Rajah menunjukkan satu plot titik yang mewakili kesudahan sebiji dadu yang dilontarkan sebanyak dua belas kali.

The diagram shows a dot plot representing the outcomes of rolling a dice for twelve times.



Cari mod, median dan min bagi data itu.

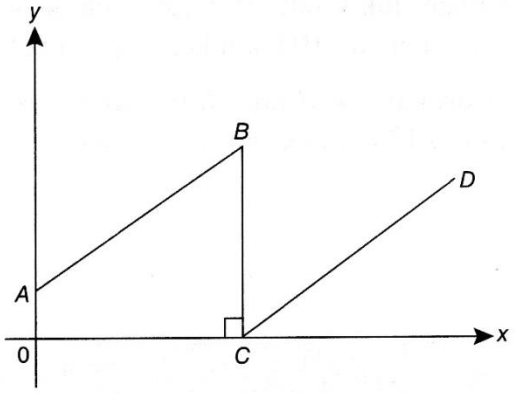
Find the mode, median and mean of the data.

[4 markah/*marks*]

Jawapan / *Answer*:

(b) Dalam rajah, garis lurus *AB* adalah selari dengan garis lurus *CD*. Persamaan garis lurus *AB* dan *BC* masing-masing ialah $2y = 4x + 5$ dan $x = 6$.

In the diagram, a straight line AB is parallel to a straight line CD. The equations of straight lines AB and BC are $2y = 4x + 5$ *and* $x = 6$ *respectively.*



(i) Cari kecerunan garis lurus *AB* dan pintasan-*x* bagi garis lurus tersebut.

Find the gradient of straight line AB and its x-intercept.

(ii) Cari persamaan garis lurus *CD*.

Find the equation of straight line CD.

[6 markah/*marks*]

Jawapan / *Answer*:

QUESTION 5 / SOALAN 5

(a) Selesaikan setiap persamaan linear yang berikut.

Solve each of the following linear equations.

(i) $\frac{48}{5k} = 2$

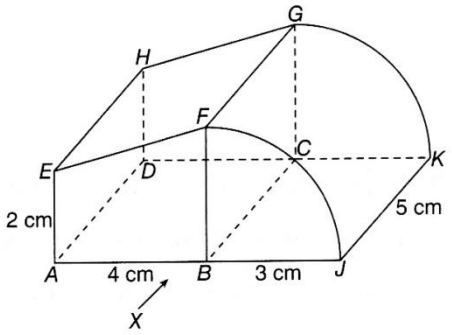
(ii) $3(1 - 2h) = h + 24$

[3 markah/*marks*]

Jawapan / *Answer*:

(b) Rajah menunjukkan sebuah pepejal gabungan yang terdiri daripada sebuah prisma dan sebuah sukuan silinder.

The diagram shows a composite solid consisting of a prism and a quarter cylinder.



Lukis dalam skala penuh,

Draw to full scale,

(i) pelan pepejal itu,
the plan of the solid,

(ii) dongakan depan seperti dilihat dari *X*.
the front elevation as viewed from X.

[6 markah/*marks*]

Jawapan / *Answer*:

QUESTION 6 / SOALAN 6

(a) Tulis setiap nombor berikut dalam bentuk piawai.

Write each of the following numbers in a standard form.

(i) 450 000

(ii) 678.2

(iii) 0.0000618

[3 markah/*marks*]

Jawapan / *Answer*:

(b) Gunakan kertas graf di ruang jawapan untuk menjawab soalan ini.

Use the graph paper in the answer space to answer this question.

Jadual menunjukkan nilai–nilai dua pemboleh ubah, x dan y, bagi suatu fungsi.

The table shows the values of two variables, x and y, of a function.

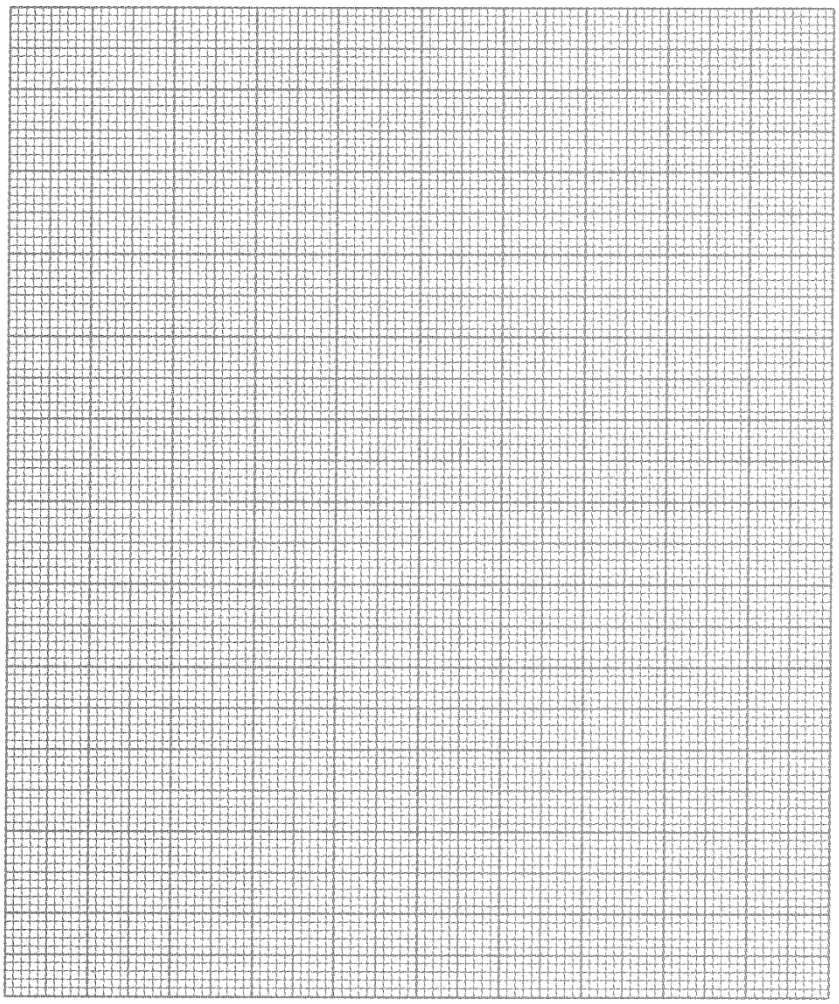
x	–2	–1	0	1	2	3	3.5	4
y	– 17	–8	–5	–2	6	28	46	67

Dengan menggunakan skala 2 cm kepada 1 unit pada paksi-x dan 2 cm kepada 10 unit pada paksi-y, lukis graf fungsi itu.

By using a scale of 2 cm *to* 1 unit *on the x-axis and* 2 cm *to* 10 units *on the y-axis, draw the graph of the function.*

[4 markah/*marks*]

Jawapan / *Answer*:

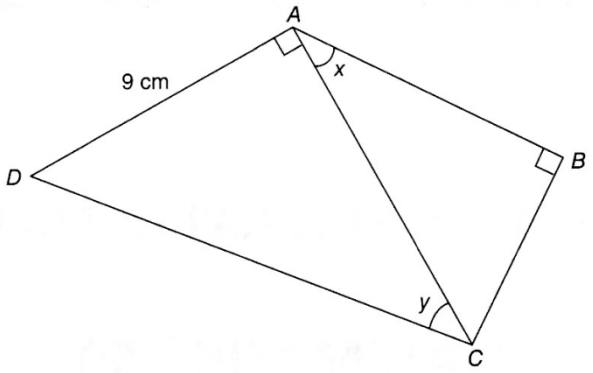


(c) Rajah menunjukkan dua segi tiga bersudut tegak, *ABC* dan *ACD*.

Diberi bahawa sin $y = \frac{3}{5}$ dan kos $x = \frac{5}{8}$.

The diagram shows two right-angled triangles, ABC and ACD.

It is given that sin $y = \frac{3}{5}$ *and* cos $x = \frac{5}{8}$.



(i) Cari nilai tan *y*.

Find the value of tan y.

(ii) Hitung panjang, dalam cm, bagi *AB*.

Calculate the length, in cm*, of AB.*

[3 markah/*marks*]

Jawapan / *Answer*:

JAWAPAN

BAHAGIAN A

1 **B**

$\frac{1}{2}, \frac{1}{3}, \frac{1}{4} = 0.5, 0.33, 0.25$

2 **D**

Mutiples of 16:
Gandaan 16:
16, 32, 48, 64, 80, 96, …
Multiples of 40:
Gandaan 40:
40, 80, 120, …
LCM/*GSTK* = 80

3 **C**

1250 : 1000 : 1750
950 : 1550 : 1500
19 : 31 : 30

4 **B**

$180° - 78° = 102°$
$180° - 102° - 35° = 43°$
$x = 43°$

5 **B**

Multiples of 24:
Gandaan 24:
24, 48, 72, 96, 120, …

6 **C**

Total surface Area
Jumlah luas permukaan:
$A = 2(4)^2 + 4(4)(7) = 144$

7 **A**

$14\frac{2}{3} = \frac{\theta}{360°} \times 2\left(\frac{22}{7}\right)(14)$

$\theta = 60°$

8 **C**

$\sqrt{(7-1)^2 + (2-10)^2}$
$= \sqrt{(6)^2 + (-8)^2}$
$= \sqrt{100}$
$= 10$

9 **D**

Gradient *KL*:
Kecerunan KL:

$\frac{-3-9}{-2-1} = \frac{-12}{-3}$
$= 4$

10 **D**

$\frac{4}{6+4+x} = \frac{2}{9}$
$36 = 12 + 8 + 2x$
$x = 8$

11 **B**

$0.000647 = 6.47 \times 10^{-4}$

12 **D**

Return on Investment/*Nilai pulangan pelaburan*

$= \frac{\text{Net Profit/}\textit{Jumlah pulangan}}{\text{Total Investment/}\textit{Nilai pelaburan awal}} \times 100\%$

$= \frac{(10\,600 + 800 - 10\,000)}{10\,000} \times 100\%$

$= 14\%$

13 **C**

$\frac{22}{7}(9)(41) + \left(\frac{22}{7}(9^2)\right)$
$= 1\,414\frac{2}{7}\ \text{cm}^2$

14 **C**

$180° - 90° - 53° = 37°$
$x = y = 37°$
$x + y = 74°$

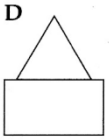
15 **C**

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

16 **B**

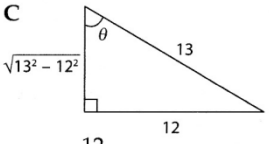
$\frac{60}{100} \times 15 = 9$ students/*murid*

17 **D**



18 **B**

19 **C**



$\sin\theta = \frac{12}{13}$

$\tan\theta = \frac{12}{5}$

20 **A**

Mean/*Min*:

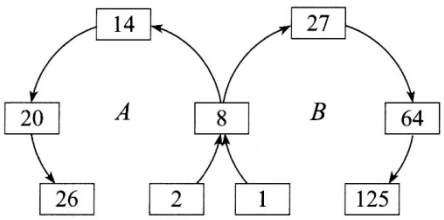
$= \frac{(23 \times 7) + (28 \times 9) + (33 \times 8) + (38 \times 6)}{(7 + 9 + 8 + 6)}$
$= 30.17$

BAHAGIAN B

1 $2g + 3h = 8$, $\frac{1}{2}m - \frac{4}{3}n = 6$, $7x - 8 = 6y$, $\frac{p}{9} = 3q +$

2 (*a*) *Q*
(*b*) *R*
(*c*) *S*
(*d*) *P*

3



4 (*a*) (i) ✓
(ii) ✗
(*b*) (i) 2
(ii) 3

5 $\frac{a^8}{a^{-2}}$, $a^{16} \div a^6$, $(a^5)^2$, $a^{13} \times a^{-3}$

BAHAGIAN C

1 (a) 2.7 kg

(b) (i) $x = 20$

(ii) 20

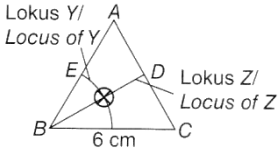
(c) 75 km j^{-1}/h^{-1}

2 (a) 84 cm^2

(b) 184 cm^2

(c) (i) Lokus *X* ialah garis lurus *CE*/ *Locus of X is straight line CE.*

(ii) (a), (b), (c)

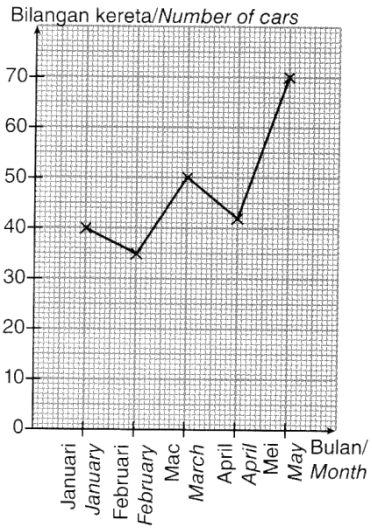


3 (a) 2 700 cm^3

(b) (i) p^{11}

(ii) 10

(c)



4 (a) Mod/ *Mode* = 3

Median = 3

Min/ *Mean* = 3.583

(b) (i) $m_{AB} = 2$

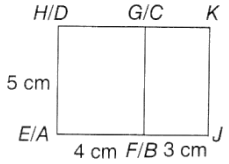
$x = -\frac{5}{4}$

(ii) $y = 2x - 12$

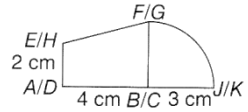
5 (a) (i) $k = 4.8$

(ii) $h = -3$

(b) (i)



(ii)



6 (a) (i) 4.5×10^5

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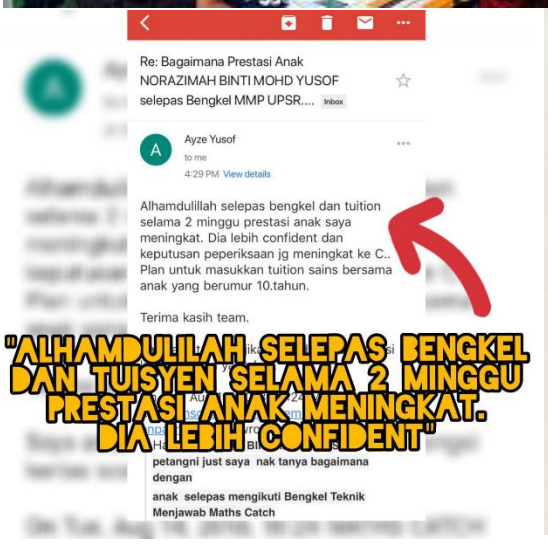

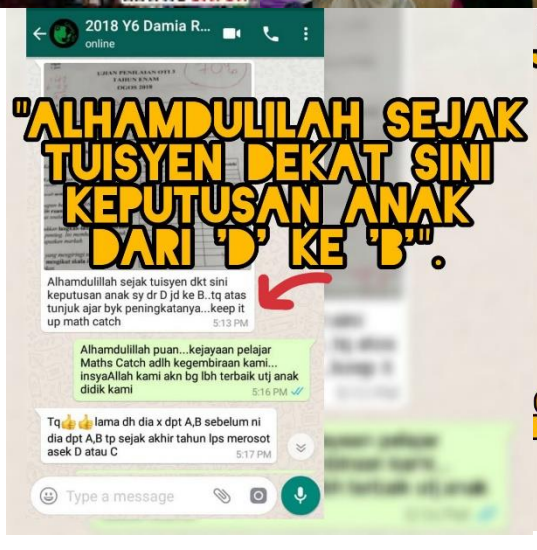

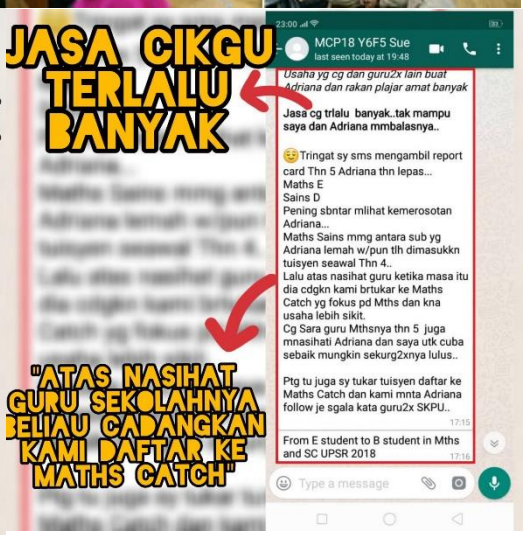

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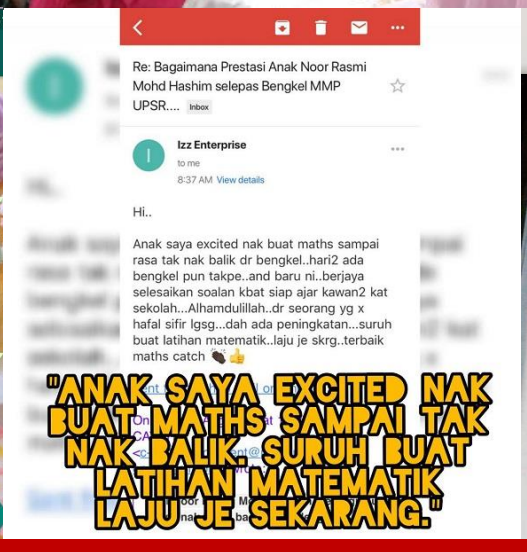
Seminar Intensif Matematik (SIM) Akhir PT3

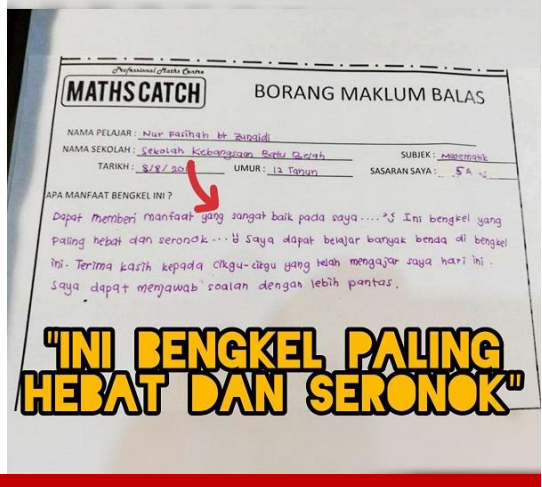
PT3 2019 dah dekat sangat? *PECUTAN AKHIR* melalui teknik Maths Catch yang sudah terbukti akan buat anak faham lebih mudah,cepat dan berkesan

SEMINAR INTENSIF MATEMATIK (SIM)
SIM
INTENSIF MATHS
MATHS CATCH

"YANG BEST ANAK SULUNG UPSR ALHAMDULILAH DAPAT A SEBELUMNI D"



"ANAK SAYA EXCITED NAK BUAT MATHS SAMPAI TAK NAK BALIK SURUH BUAT LATIHAN MATEMATIK LAJU JE SEKARANG."



"INI BENGKEL PALING HEBAT DAN SERONOK"

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