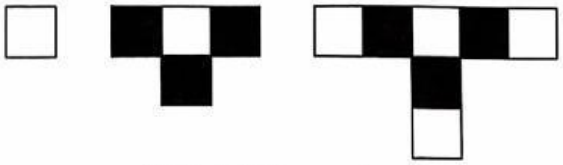
PENILAIAN AKHIR TAHUN

/100

Bahagian A

Jawab **semua** soalan.
*Answer **all** questions.*
[20 markah/ *marks*]

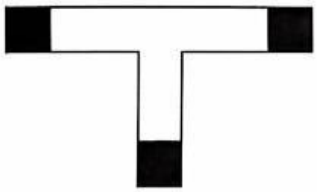
1 Rajah 1 menunjukkan satu corak.
Diagram 1 shows a pattern.



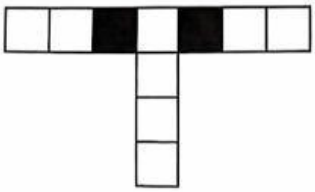
Rajah 1/ *Diagram 1*

Berdasarkan polanya, tentukan corak yang keempat.
Based on its sequence, determine the fourth pattern.

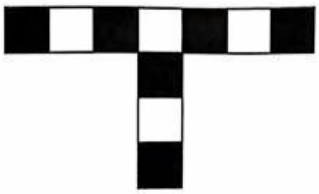
A



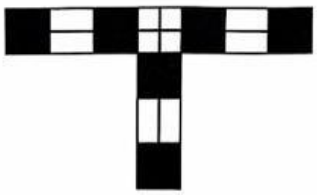
B



C



D



2 Diberi $y = 2(x - 9) + z^2$. Jika $y = 17$ dan $x = 13$, hitungkan nilai z.
Given $y = 2(x - 9) + z^2$. If $y = 17$ and $x = 13$, calculate the value of z.

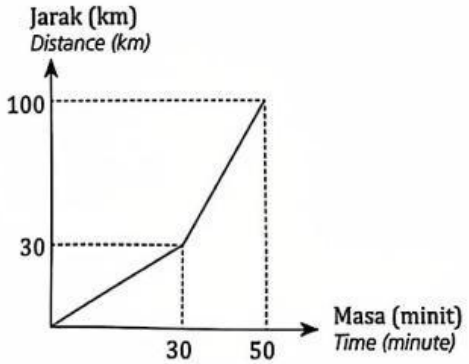
A 3
B 9
C 12
D 24

3 Kembangkan/ *Expand*:

$$(x - 2y)(2x + y)$$

A $2x^2 + 2y^2 - 3xy$
B $2x^2 - 2y^2 - 3xy$
C $2x^2 + 2y^2 + 4xy$
D $2x^2 - 2y^2 - 4xy$

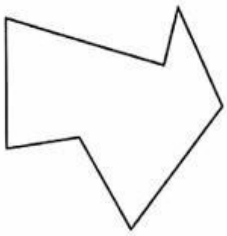
4 Graf berikut ialah sebuah graf jarak-masa bagi sebuah kereta.
The following graph is a distance-time graph of a car.



Hitungkan laju purata, dalam m/min, kereta itu.
Calculate the average speed, in m/min, of the car.

A 0.002
B 1 000
C 2 000
D 120 000

5 Rajah 2 menunjukkan sebuah poligon.
Diagram 2 shows a polygon.



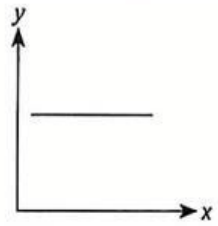
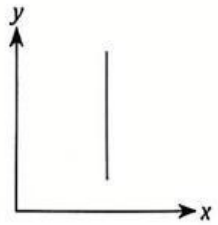
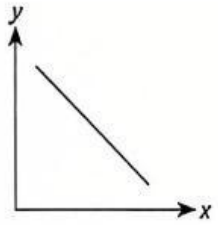
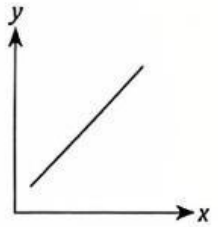
Rajah 2/ *Diagram 2*

LIVEWORKSHEETS

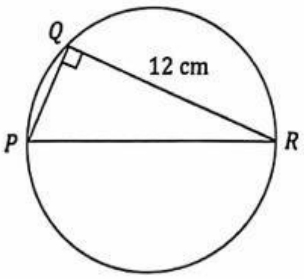
Cari jumlah sudut pedalaman bagi poligon di atas.
Find the total interior angle of the polygon above.

A 360°
B 540°
C 720°
D 900°

6 Antara berikut, yang manakah adalah betul?
Which of the following is correct?

	Graf garis lurus *Straight line graph*	Kecerunan *Gradient*
A		0
B		Positif *Positive*
C		Tidak tertakrif *Undefined*
D		Negatif *Negative*

7 Rajah 3 menunjukkan sebuah bulatan.
Diagram 3 shows a circle.



Rajah 3/ *Diagram 3*

Diberi QR = 12 cm dan luas segi tiga PQR ialah 30 cm². Hitungkan luas, dalam cm², bulatan itu.
Given QR = 12 cm and the area of triangle PQR is 30 cm². Calculate the area, in cm², of the circle.

$\left[\text{Guna/ Use: } \pi = \frac{22}{7}\right]$

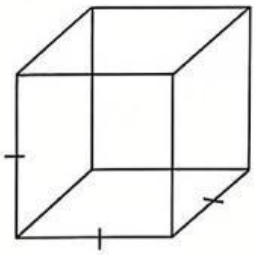
A $78\frac{4}{7}$

B $132\frac{11}{14}$

C $452\frac{4}{7}$

D $531\frac{1}{7}$

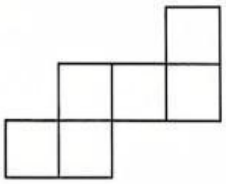
8 Rajah 4 menunjukkan sebuah bentuk tiga dimensi.
Diagram 4 shows a three-dimensional shape.



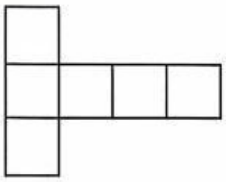
Rajah 4/ *Diagram 4*

Antara berikut, yang manakah **bukan** bentangan bagi bentuk di atas?
*Which of the following is **not** a net of the shape above?*

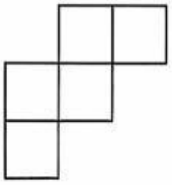
A



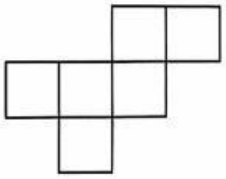
B



C

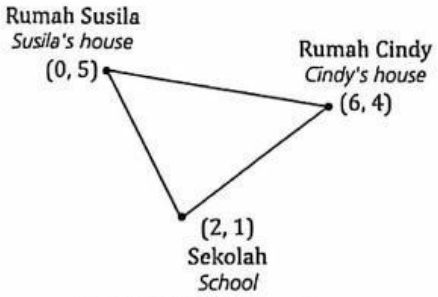


D



LIVEWORKSHEETS

9 Rajah 5 menunjukkan kedudukan rumah Susila, rumah Cindy dan sekolah.
Diagram 5 shows the positions of Susila's house, Cindy's house and the school.

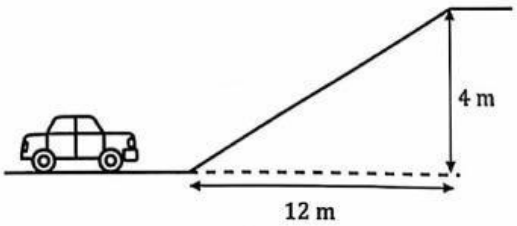


Rajah 5/ *Diagram 5*

Hitungkan beza jarak, dalam unit, antara rumah Susila ke sekolah dan rumah Cindy ke sekolah.
Calculate the difference in distance, in units, between Susila's house to the school and Cindy's house to school.

A 0.50
B 0.53
C 6.08
D 9.47

10 Rajah 6 menunjukkan sebahagian jalan di sebuah kampung.
Diagram 6 shows a part of the road in a village.



Rajah 6/ *Diagram 6*

Cari kecerunan jalan itu.
Find the gradient of the road.

A 3
B $\frac{1}{3}$
C $-\frac{1}{3}$
D -3

11 Rajah 7 menunjukkan suatu bentuk.
Diagram 7 shows a shape.

Rajah 7/ *Diagram 7*

Tentukan peringkat simetri putaran bagi bentuk di atas.
Determine the order of rotational symmetry of the shape above.

A 12 peringkat
12th order
B 9 peringkat
9th order
C 6 peringkat
6th order
D 3 peringkat
3rd order

12 Armin mengisikan sebuah beg dengan 30 biji guli. Nisbah bilangan guli merah kepada guli kuning ialah 4 : 5 dan nisbah bilangan guli hijau kepada guli merah ialah 3 : 2. Hitungkan kebarangkalian sebiji guli merah dipilih secara rawak daripada beg itu.
Armin filled a bag with 30 marbles. The ratio of the number of red marbles to yellow marbles is 4 : 5 and the ratio of the numbers of green marbles to red marbles is 3 : 2. Calculate the probability of chosing a red marbles randomly from the bag.

A $\frac{4}{15}$
B $\frac{1}{3}$
C $\frac{2}{5}$
D $\frac{11}{15}$

13 Rajah 8 menunjukkan kapasiti air sebuah baldi.
Diagram 8 shows the water capacity of a pail.

Rajah 8/ *Diagram 8*

Baldi itu digunakan untuk mengumpul air daripada sebuah paip bocor. Air memenuhi baldi itu pada setiap 15 minit. Hitungkan isi padu, dalam ℓ, air yang dapat dikumpulkan dalam setengah hari.
The pail is used to collect water from a leaked pipe. The water filled up the pail every 15 minutes. Calculate the volume, in ℓ, of water can be collected in half a day.

A 2.4
B 24
C 240
D 2 400

LIVEWORKSHEETS

14 Plot batang-dan-daun menunjukkan ketinggian murid dalam kelas 2A.
The stem-and-leaf plot shows the height of students in class 2A.

Ketinggian murid dalam kelas 2A
The height of students in class 2A

Batang *Stem*	Daun *Leaf*								
12	8	8							
13	0	1	2	3	6	9			
14	2	3	3	5	7	8	8	8	9
15	2	6	7	8	9				
16	1	4	5						

Kekunci: 12 | 8 bermaksud 128 cm
Key: 12 | 8 refers to 128 cm

Antara berikut, yang manakah betul mengenai murid di kelas 2A?
Which of the following is correct about the students in class 2A?

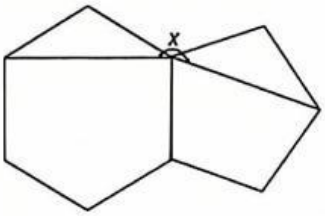
A Median bagi ketinggian murid dalam kelas 2A ialah 147 cm
The median of the height of students in class 2A is 147 cm

B Mod ketinggian murid dalam kelas 2A ialah 140 cm
The mode of the height of students in class 2A is 140 cm

C Min ketinggian murid dalam kelas 2A ialah 147 cm
The mean height of students in class 2A is 147 cm

D Murid yang paling tinggi dalam kelas 2A ialah 149 cm
The tallest student in class 2A is 149 cm

15 Rajah 9 menunjukkan sebuah heksagon sekata dan sebuah pentagon sekata.
Diagram 9 shows a regular hexagon and a regular pentagon.

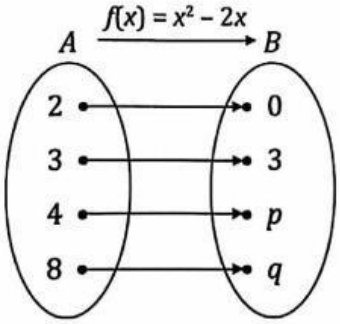


Rajah 9/ *Diagram 9*

Cari nilai *x*.
Find the value of x.

A 66 **C** 198
B 132 **D** 228

16 Rajah 10 menunjukkan set *A* dipetakan kepada set *B*.
Diagram 10 shows set A is mapped into set B.



Rajah 10/ *Diagram 10*

Antara berikut, yang manakah mewakili *p* dan *q*?
Which of the following represents p and q?

	p	*q*
A	2	8
B	4	8
C	8	48
D	8	56

17 Laju sebuah kereta meningkat daripada 20 km/j kepada 60 km/j dalam 10 minit. Jika pemandu mengekalkan pecutannya selama 15 minit lagi, hitungkan laju akhir, dalam km/j, kereta itu.
The speed of a car increases from 20 km/h to 60 km/h in 10 minutes. If the driver maintained his acceleration for another 15 minutes, calculate the final speed, in km/h, of the car.

A 60
B 80
C 100
D 120

18 Berikut menunjukkan satu set data.
The following shows a set of data.

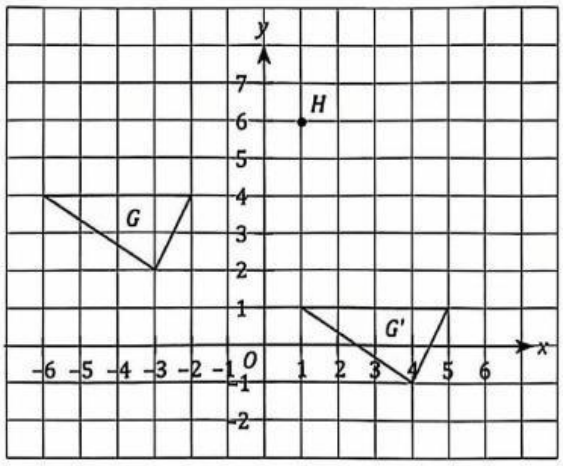
12, 14, 15, *x*, *y*, 16, 16, 20

Diberi median dan mod masing-masing ialah 15.5 dan 16. Hitungkan min bagi set data di atas.
Given that the median and mode are 15.5 and 16 respectively. Find the mean of the set of data above.

A 15
B 15.5
C 16
D 16.5

LIVEWORKSHEETS

19 Pada Rajah 12, segi tiga *G'* ialah imej bagi segi tiga *G* di bawah suatu translasi.
In Diagram 12, triangle G' is the image of triangle G under a translation.



Rajah 12/ *Diagram 12*

Antara berikut, yang manakah ialah koordinat imej bagi titik *H* di bawah translasi yang sama?
Which of the following is the coordinates of the image of point H under the same translation?

A (8, 3)
B (8, 9)
C (−6, 3)
D (−6, 9)

20 Jadual 1 menunjukkan bilangan murid di dua buah kelas Tingkatan 2.
Table 1 shows the number of students in two Form 2 classes.

Kelas *Class*	**Bilangan murid** *Number of students*	
	Lelaki *Male*	**Perempuan** *Female*
2A	14	17
2B	18	16

Jadual 1/ *Table 1*

Seorang murid lelaki akan dipilih daripada kedua-dua kelas itu untuk mewakili sekolah dalam kuiz Matematik. Cari kebarangkalian seorang murid lelaki dipilih adalah daripada kelas 2B.
A male student will be chosen from both classes to represent the school in a Mathematics quiz. Find the probability that a male student is selected from class 2B.

A $\frac{9}{16}$
B $\frac{7}{16}$
C $\frac{18}{65}$
D $\frac{14}{65}$

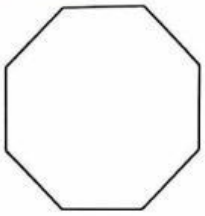
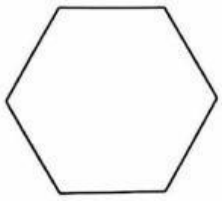
Bahagian B

Jawab **semua** soalan.
*Answer **all** questions.*
[20 markah/ *marks*]

1 Tuliskan sudut peluaran dan jumlah sudut pedalaman bagi setiap poligon sekata yang berikut.
Write the exterior angle and the total interior angle for each of the following regular polygons.

[4 markah/ *marks*]

Jawapan/ *Answer*:

	Poligon sekata *Regular polygon*	**Sudut peluaran** *Exterior angle*	**Jumlah sudut pedalaman** *Total interior angle*
(*a*)		(i)	(ii)
(*b*)		(i)	(ii)

LIVEWORKSHEETS

2 Diberi/ *Given*:

ξ = {kad bernombor daripada 1 hingga 20}
ξ = *{numbered cards from 1 to 20}*

P = {nombor genap}
P = *{even number}*

Q = {nombor perdana}
Q = *{prime number}*

R = {gandaan 5}
R = *{multiple of 5}*

S = {hasil tambah kedua-dua digit daripada nombor berdigit dua ialah 5}
S = *{the sum of both digits from a two-digits number is 5}*

Susun kebarangkalian bagi kad bernombor yang dapat dipilih dalam set berikut mengikut tertib menaik.
Arrange the probability for the numbered cards which can be chosen in the following set in ascending order.

[4 markah/ *marks*]

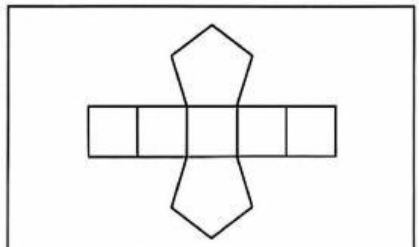
Jawapan/ *Answer*:

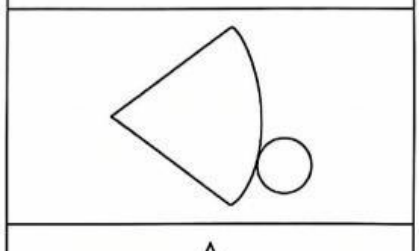
Set P ☐ Set Q ☐ Set R ☐ Set S ☐

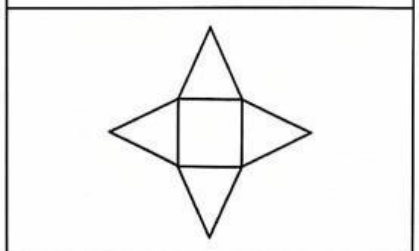
3 Padankan bentangan berikut dengan nama poligon yang betul.
Match the following nets with the correct name of the polygons.

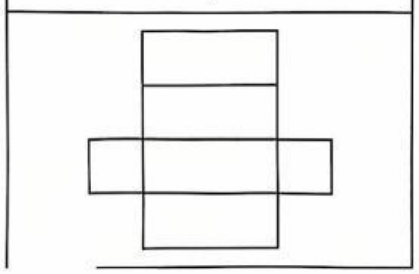
[4 markah/ *marks*]

Jawapan/ *Answer*:





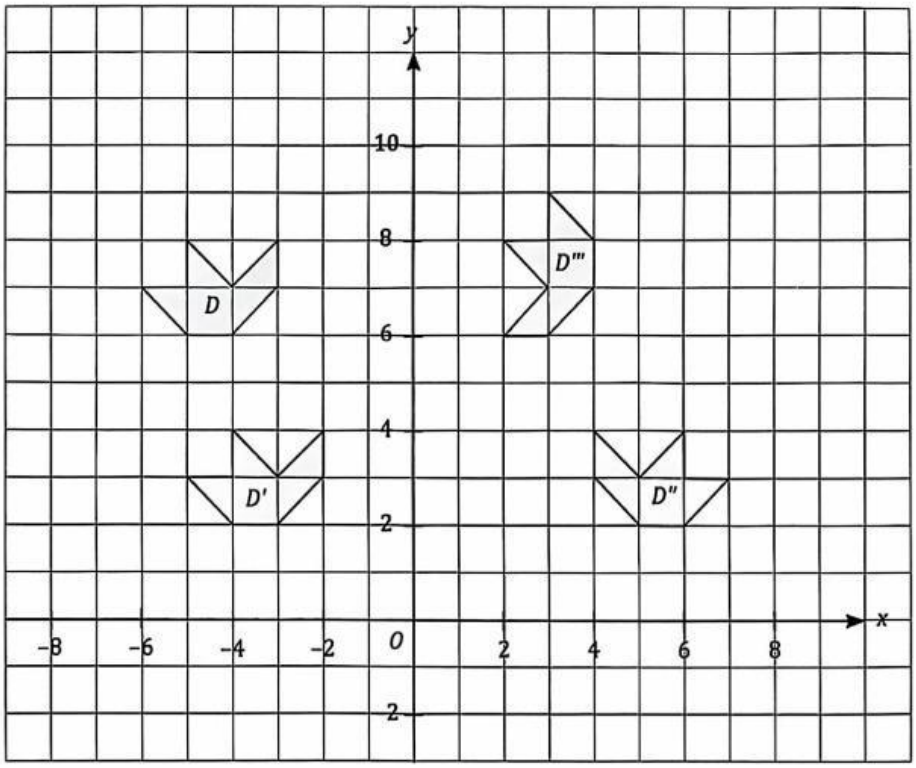




Piramid *Pyramid*	
Prisma *Prism*	
Kuboid *Cuboid*	
Kon *Cone*	

LIVEWORKSHEETS

4 Rajah 1 menunjukkan kedudukan beberapa bentuk pada satah Cartes.
Diagram 1 shows the positions of a few shapes on the Cartesian plane.



Rajah 1/ *Diagram 1*

Diberi D' ialah imej bagi D di bawah suatu translasi dan, D'' dan D''' ialah imej masing-masing bagi D' dan D'' di bawah suatu penjelmaan.
Given that D′ is the image of D under a translation and, D″ and D‴ are the images of D′ and D″ respectively under certain transformations.

Tandakan (✓) bagi pernyataan yang betul dan (✗) bagi pernyataan yang salah.
Mark (✓) for the correct statements and (✗) for the wrong statements.

[4 markah/ *marks*]

Jawapan/ *Answer*:

(*a*)	Vektor translasi bagi imej D' daripada objek D ialah $\begin{pmatrix}1\\-4\end{pmatrix}$. *The vector translation of image D′ from object D is* $\begin{pmatrix}1\\-4\end{pmatrix}$.	
(*b*)	Imej D'' merupakan pantulan objek D' pada paksi pantulan $x = 1$. *Image D″ is the reflection of object D′ in the axis of reflection x = 1.*	
(*c*)	Pusat putaran bagi imej D''' ialah (4, 2). *The centre of rotation for image D‴ is (4, 2).*	
(*d*)	Imej D''' adalah di bawah putaran 90° ikut arah jam. *Image D‴ is under clockwise rotation of 90°.*	

LIVEWORKSHEETS

5 Tentukan sama ada set nombor berikut adalah berpola atau tidak.
Determine whether the followng sets of number have pattern or not.

[4 markah/ *marks*]

Jawapan/ *Answer*:

	Set nombor ***Set of numbers***	**Berpola/ Tidak berpola** ***Has pattern / Does not have pattern***
(*a*)	6, 10, 15, 21, 28	
(*b*)	5, 10, 20, 25, 40	
(*c*)	$\frac{1}{2}, \frac{1}{4}, \frac{1}{6}, \frac{1}{8}, \frac{1}{10}$	
(*d*)	17, 8, 1, −1, −4	

LIVEWORKSHEETS