



**MODUL TOPIKAL
SOALAN PERCUBAAN SPM 2023**

**TOPIK TINGKATAN 4
BAB 9**

**PENYELESAIAN SEGI TIGA
(*SOLUTION OF TRIANGLES*)**

**SUMBER SOALAN:
SOALAN – SOALAN PERCUBAAN**

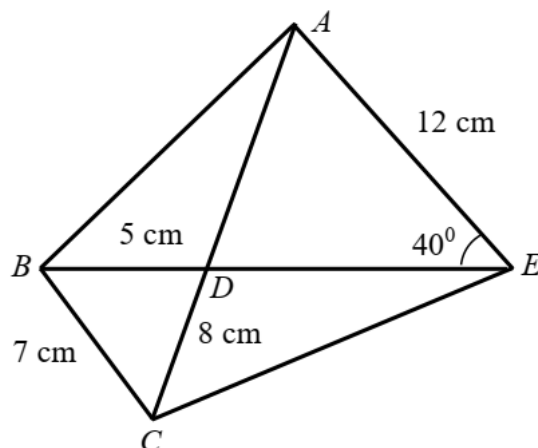
TERENGGANU
NEGERI SEMBILAN
KELANTAN
SABAH
SBP
MELAKA
SELANGOR (MODUL PINTAS-SET 1)
PERAK

DISUSUN OLEH:
PN. NOORUL HUDA BINTI MOHD HASHIM
(SMK TAMAN TASIK, TAIPING)

PN ZAINAB BINTI ABD RAHMAN
(SMK CONVENT, TAIPING)

SOALAN 1 : SOALAN PERCUBAAN SPM NEGERI TERENGGANU 2023 (KERTAS 2)

- 12 Dalam Rajah 5, $BD = 5$ cm, $BC = 7$ cm, $CD = 8$ cm, $AE = 12$ cm dan $\angle AEB = 40^\circ$.
In Diagram 5, $BD = 5$ cm, $BC = 7$ cm, $CD = 8$ cm, $AE = 12$ cm and $\angle AEB = 40^\circ$.



Rajah 5
Diagram 5

- (a) Hitung
Calculate
- $\angle BDC$
 - panjang, dalam cm, AD ,
the length, in cm, of AD ,
 - luas, dalam cm^2 , segitiga ABC .
the area, in cm^2 , of triangle ABC .

[7 markah]

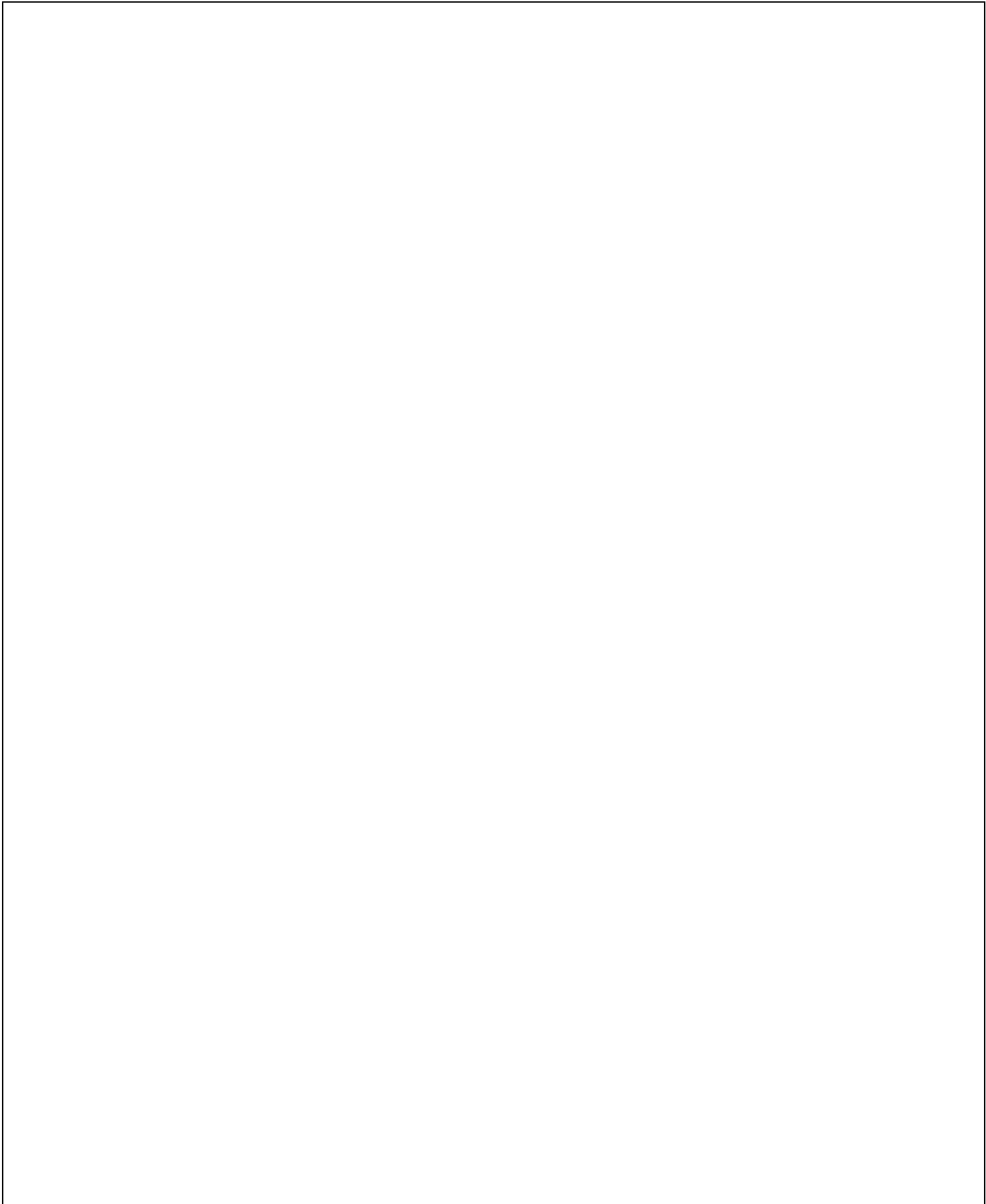
[7 marks]

- (b) Titik D' terletak pada BE dengan keadaan $AD' = AD$.
Point D' lies on BE such that $AD' = AD$.

- Lakar $\triangle AD'E$.
Sketch $\triangle AD'E$.
- Hitung luas, dalam cm^2 , $\triangle AD'E$.
Calculate the area, in cm^2 , $\triangle AD'E$.

[3 markah]

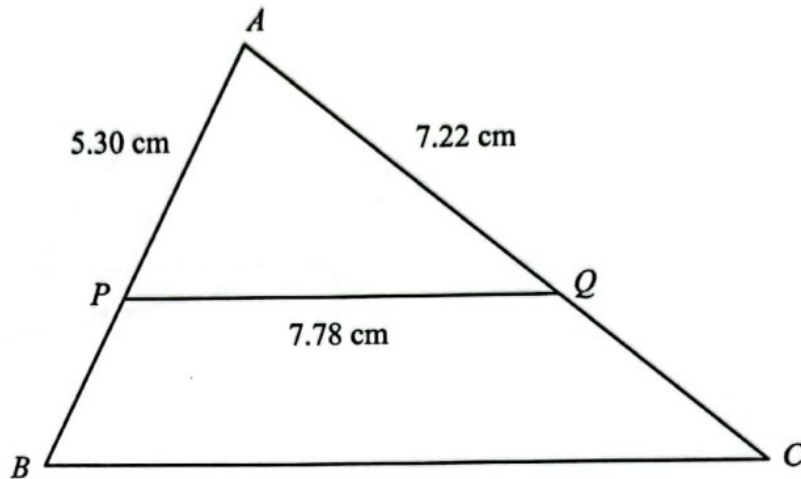
JAWAPAN :



SOALAN 2 : SOALAN PERCUBAAN SPM NEGERI SEMBILAN 2023 (KERTAS 2)

- 12 Rajah 7 menunjukkan sebuah segi tiga ABC . APB dan AQC adalah garis lurus dan garis PQ adalah selari dengan garis BC .

Diagram 7 shows a triangle ABC . APB and AQC are straight lines and line PQ is parallel to the line BC .



Rajah 7
Diagram 7

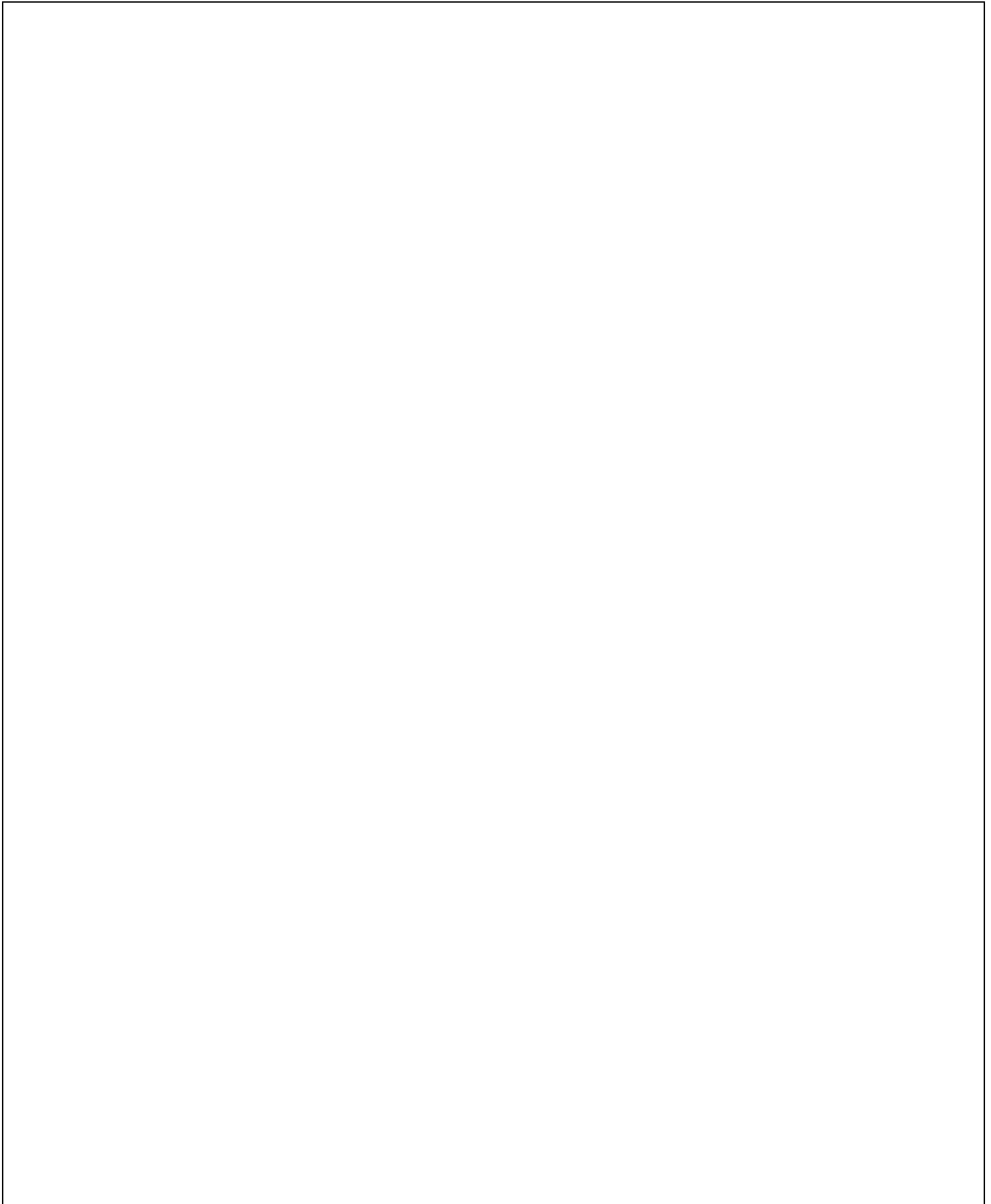
- (a) Cari
Find
- (i) $\angle PAQ$,
 - (ii) $\angle APQ$,
 - (iii) luas, dalam cm^2 , segitiga APQ .
the area of triangle APQ , in cm^2 .

[6 markah]
[6 marks]

- (b) Diberi bahawa $AP : PB = 3 : 2$, cari
Given that $AP : PB = 3 : 2$, find
- (i) luas segitiga ABC ,
the area of triangle ABC ,
 - (ii) jarak terdekat dari bucu A ke garis lurus BC .
the shortest distance from vertex A to the straight line BC .

[4 markah]

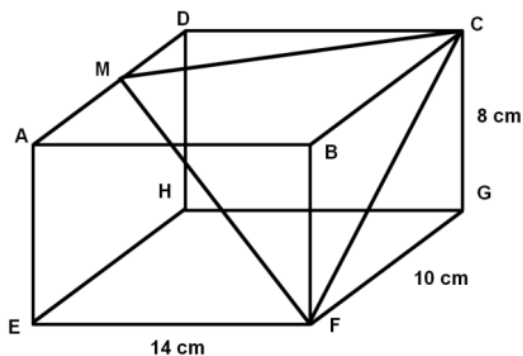
JAWAPAN:



SOALAN 3 : SOALAN PERCUBAAN SPM NEGERI KELANTAN 2023 (KERTAS 2)

12 Rajah 9 menunjukkan sebuah kuboid $ABCDEFGH$.

Diagram 9 shows two triangles $ABCDEFGH$.



Rajah 9

Diagram 9

Diberi $EF = 14$ cm, $FG = 10$ cm, dan $CG = 8$ cm. M ialah titik tengah bagi AD .

Given $EF = 14$ cm, $FG = 10$ cm, and $CG = 8$ cm. M is a midpoint of AD .

Cari

Find

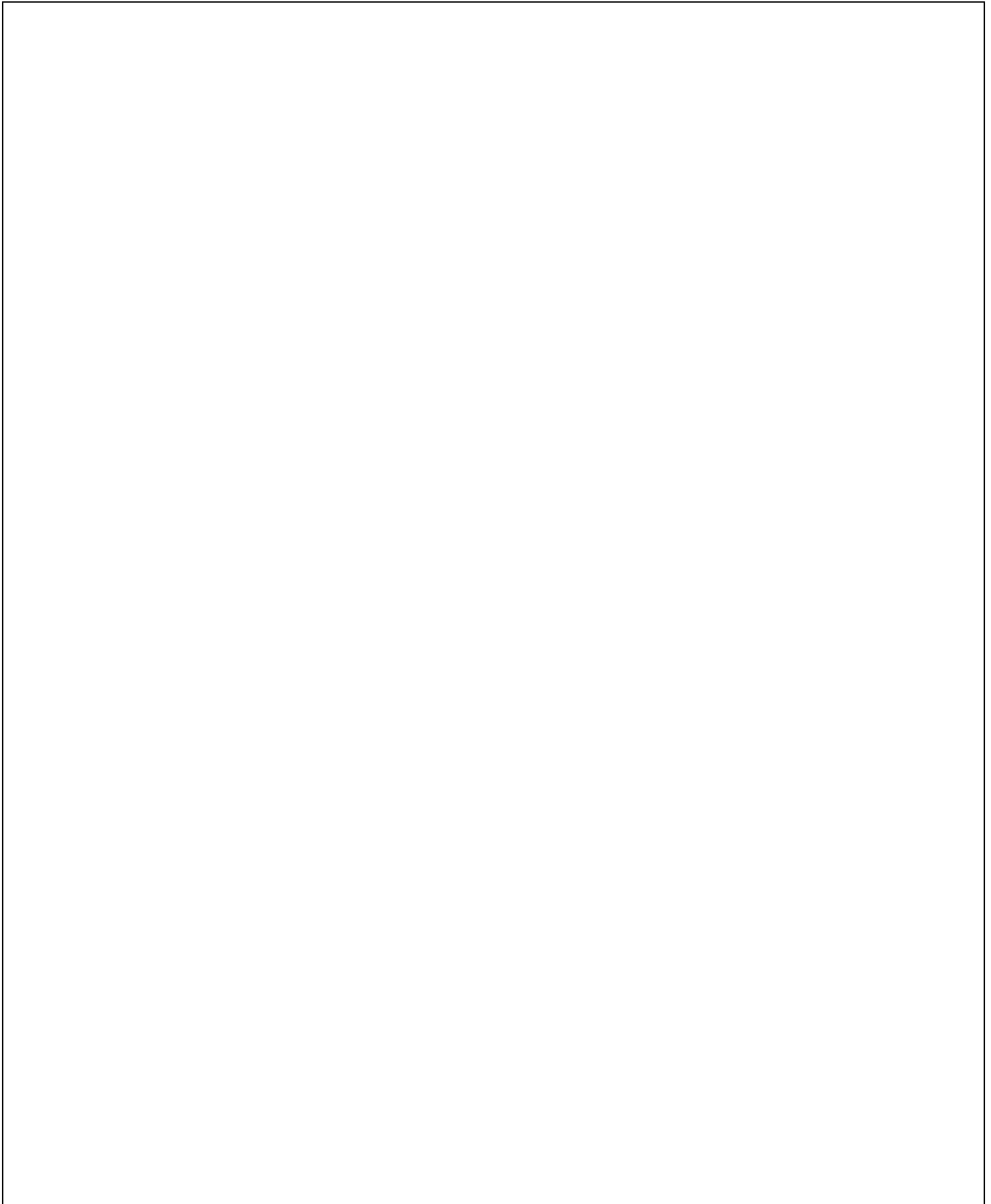
(a) $\angle FCM$ [4 markah]
 [4 marks]

(b) $\angle CMF$ [2 markah]
 [2 marks]

(c) Luas bagi segitiga FCM . [2 markah]
The area of triangle FCM . [2 marks]

(d) Jarak terdekat dari M ke CF . [2 markah]
The shortest distance from M to CF . [2 marks]

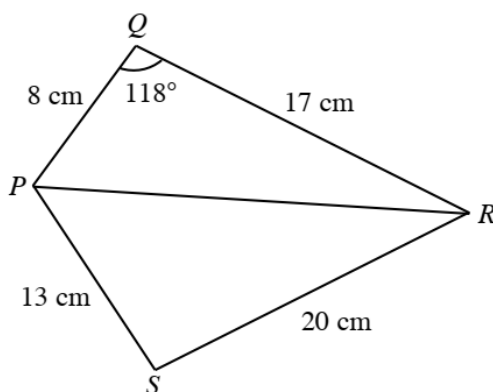
JAWAPAN



SOALAN 4 : SOALAN PERCUBAAN SPM NEGERI SABAH 2023 (KERTAS 2)

12. Rajah 12 menunjukkan sisi empat $PQRS$.

Diagram 12 shows a quadrilateral $PQRS$.



Rajah 12/Diagram 12

a) Cari

Find

- (i) panjang, dalam cm, PR ,
the length, in cm, PR ,

[2 markah/marks]

- (ii) $\angle PRQ$,

[2 markah/marks]

- (iii) luas, dalam cm^2 , sisi empat $PQRS$.
the area, in cm^2 , of quadrilateral $PQRS$.

[3 markah/marks]

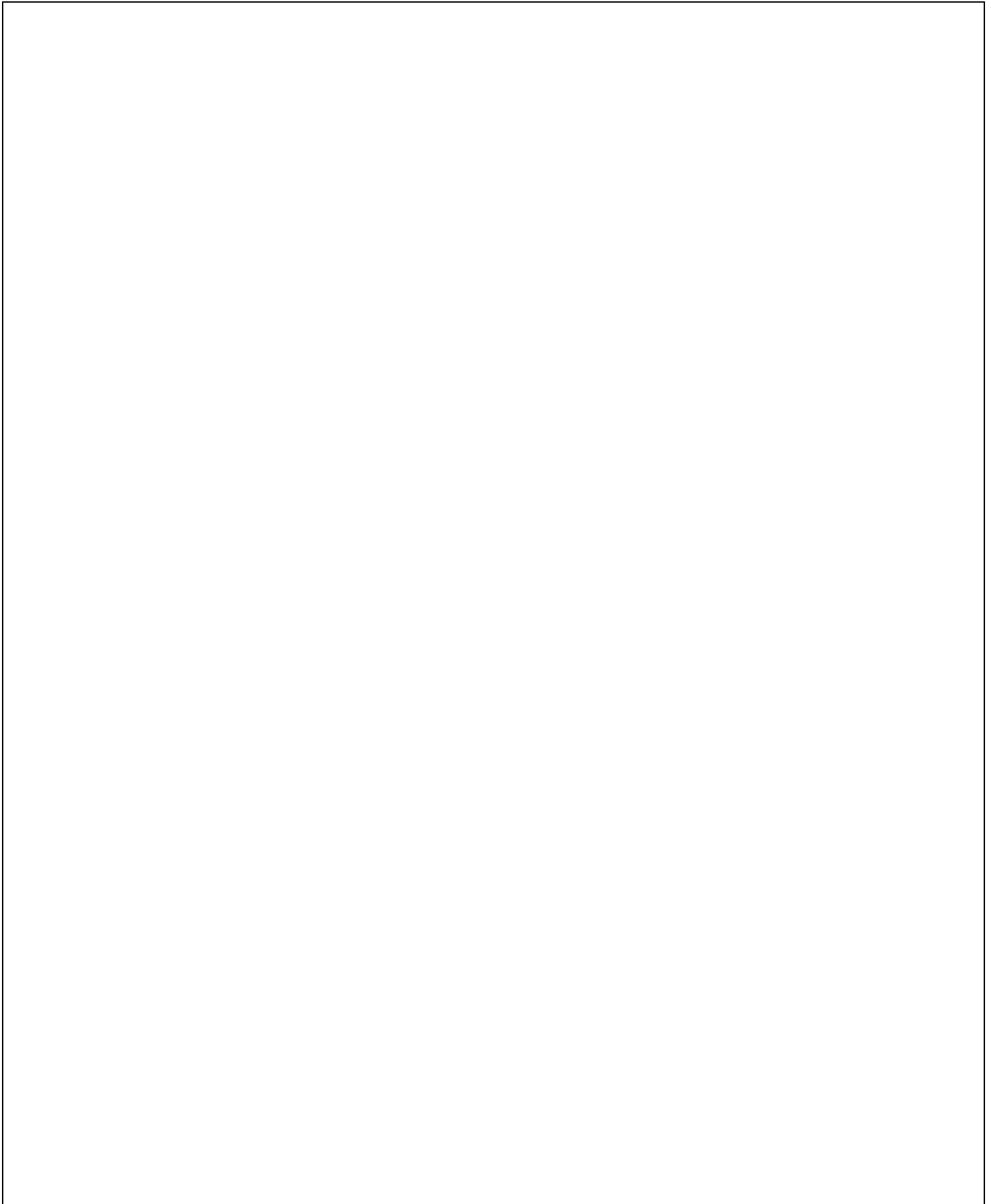
- b) (i) Lakarkan segi tiga $P'R'S'$ yang mempunyai bentuk berbeza daripada segi tiga PRS dengan keadaan P' terletak pada PR dan $\sin \angle RPS = \sin \angle R'P'S'$.
Sketch triangle $P'R'S'$ which has a different shape from triangle PRS such that P' lies on PR and $\sin \angle RPS = \sin \angle R'P'S'$.

[2 markah/marks]

- (ii) Seterusnya, nyatakan saiz $\angle R'P'S'$.
Hence, state the size of $\angle R'P'S'$.

[1 markah/mark]

JAWAPAN :



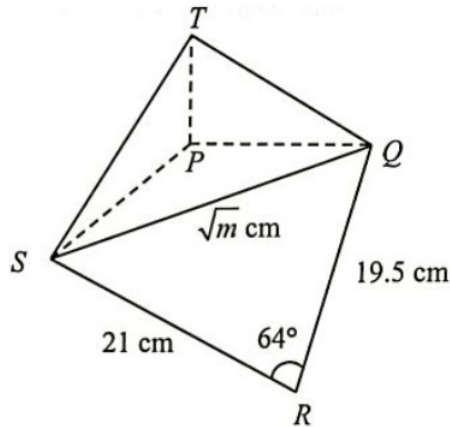
SOALAN 5 : SOALAN PERCUBAAN SPM SBP 2023 (KERTAS 2)

13 Penyelesaian secara lukisan berskala tidak diterima.

Solution by scale drawing is not accepted.

Rajah 7 menunjukkan sisi empat $PQRS$ pada suatu satah mengufuk. $TSQP$ ialah sebuah piramid dengan keadaan $PQ = 10$ cm, $PS = 12$ cm dan T adalah 5 cm tegak di atas P .

Diagram 7 shows a quadrilateral $PQRS$ on a horizontal plane. $TSQP$ is a pyramid such that $PQ = 10$ cm, $PS = 12$ cm and T is 5 cm vertically above P .

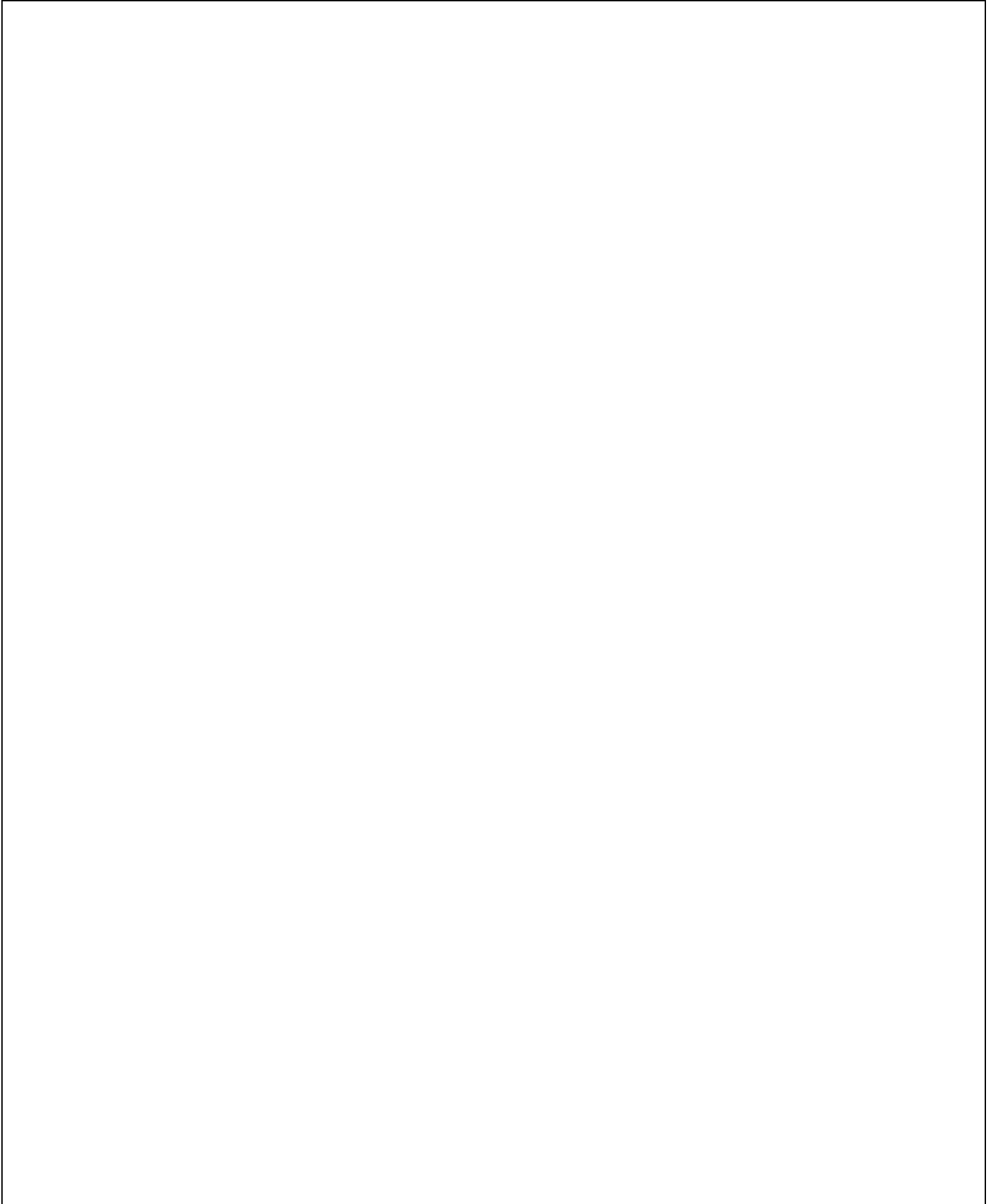


Rajah 7
 Diagram 7

Cari
 Find

- (a) nilai m ,
 the value of m ,
 [2 markah]
 [2 marks]
- (b) $\angle RSQ$,
 [2 markah]
 [2 marks]
- (c) luas, dalam cm^2 , bagi satah condong STQ .
 the area, in cm^2 , of inclined plane STQ .
 [4 markah]
 [4 marks]
- (d) panjang terdekat, dalam cm, dari titik T ke garis lurus SQ .
 the shortest length, in cm, from point T to the straight line SQ .
 [2 markah]
 [2 marks]

JAWAPAN :



SOALAN 6 : SOALAN PERCUBAAN SPM MELAKA 2023 (KERTAS 2)

- 12 Rajah 6 menunjukkan sebuah bangunan yang berbentuk piramid dengan tapak segi tiga QTS.
Diagram 6 shows a building pyramid in shaped with the base QTS.

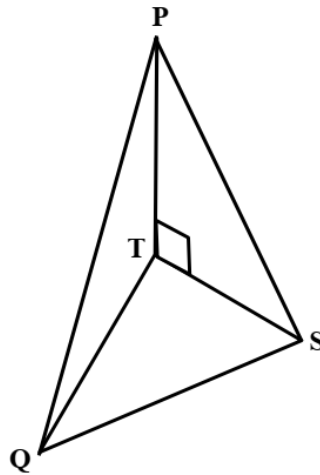


Diagram 6 / Rajah 6

Diberi $QT = 60\text{m}$, $TS = 80\text{m}$ and $QS = 100\text{m}$. Puncak P berada 90 m tegak di atas T.

Sekumpulan pekerja perlu cat permukaan condong dinding PQS,

Given $QT = 60\text{m}$, $TS = 80\text{m}$ and $QS = 100\text{m}$. The vertex P is 90 m vertically above T. A group of workers have to paint the inclined wall PQS,

- (a) Cari panjang sisi dalam m, bagi yang berikut

Find the side length in m, for the following

- (i) PS
(ii) PQ

[2 markah/marks]

- (b) Hitung sudut $\sphericalangle PSQ$

Calculate $\sphericalangle PSQ$

[2 markah/marks]

- (c) Dengan menggunakan rumus Heron, cari luas permukaan condong dinding yang perlu di cat

By using Heron's formula, find the area of the painted inclined wall.

[2 markah/marks]

- (d) (i) Lakarkan sebuah segitiga $P'Q'S'$ yang mempunyai bentuk berbeza daripada segi tiga

PQS dengan keadaan $P'Q' = PQ$, $P'S' = PS$ dan $\sphericalangle P'S'Q' = \sphericalangle PSQ$

Sketch a triangle $P'Q'S'$ which has a different shape from triangle PQS such that

$P'Q' = PQ$, $P'S' = PS$ and $\sphericalangle P'S'Q' = \sphericalangle PSQ$

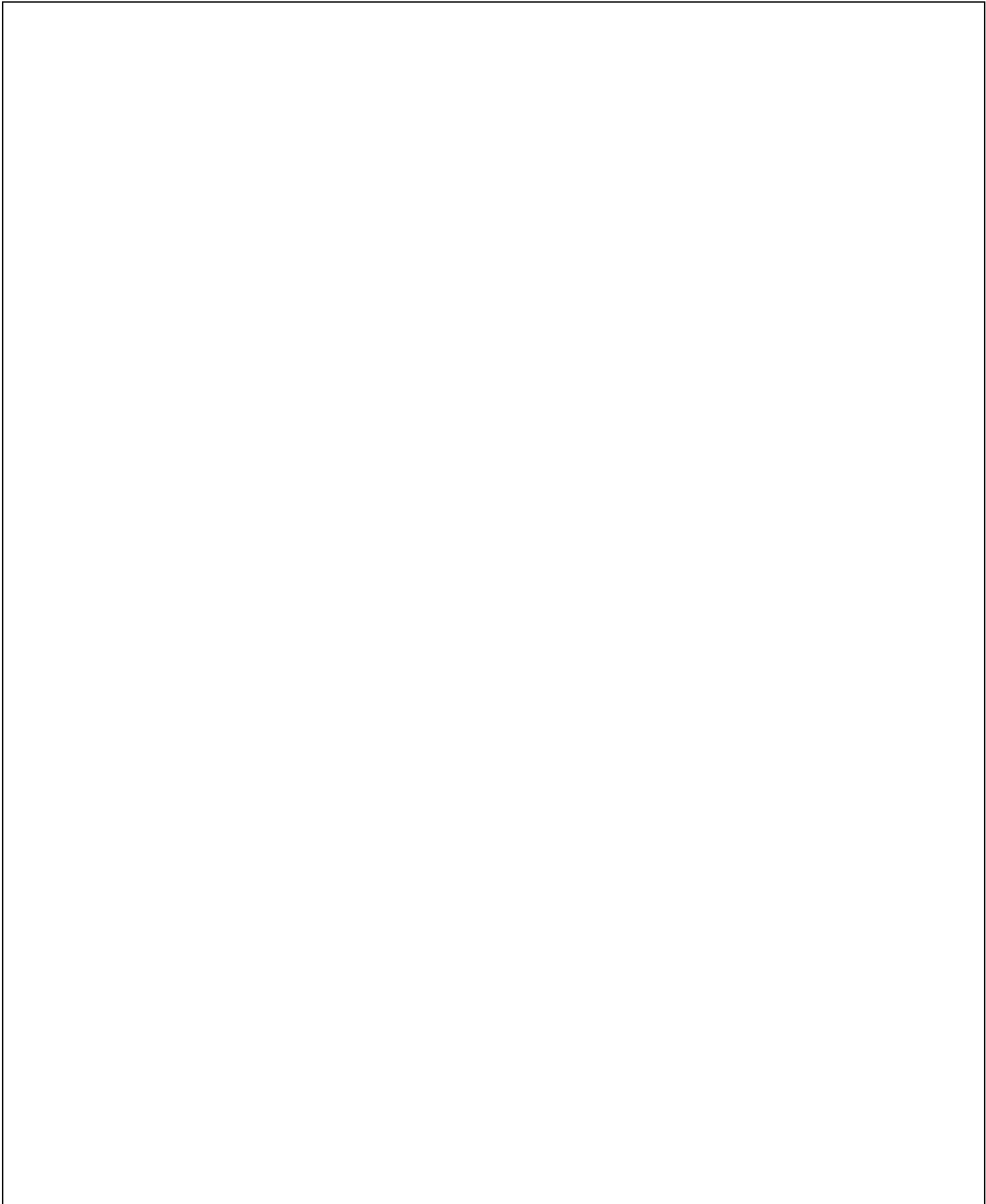
[1 markah/mark]

- (ii) Cari $\sphericalangle P'Q'S'$

Find $\sphericalangle P'Q'S'$

[3 markah/marks]

JAWAPAN :



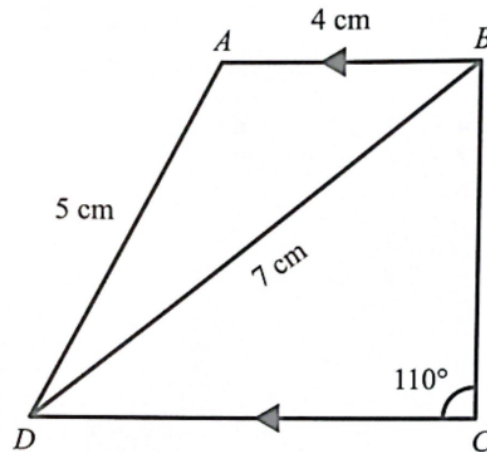
SOALAN 7 : SOALAN PERCUBAAN SPM SELANGOR SET 1 2023 (KERTAS 2)

13 Penyelesaian secara lukisan berskala tidak diterima.

Solutions by scale drawing is not accepted.

Rajah 13 menunjukkan sebuah trapezium $ABCD$.

Diagram 13 shows trapezium $ABCD$.



Rajah 13
Diagram 13

(a) Hitung

Calculate

(i) $\angle ABD$,

(ii) panjang, dalam cm, bagi BC .

the length, in cm, of BC .

[4 markah]

[4 marks]

(b) Garis lurus BA dipanjangkan ke A' dengan keadaan $AD = A'D$.

The straight line BA is extended to A' such that $AD = A'D$.

(i) Lakar trapezium $A'BCD$.

Sketch the trapezium $A'BCD$.

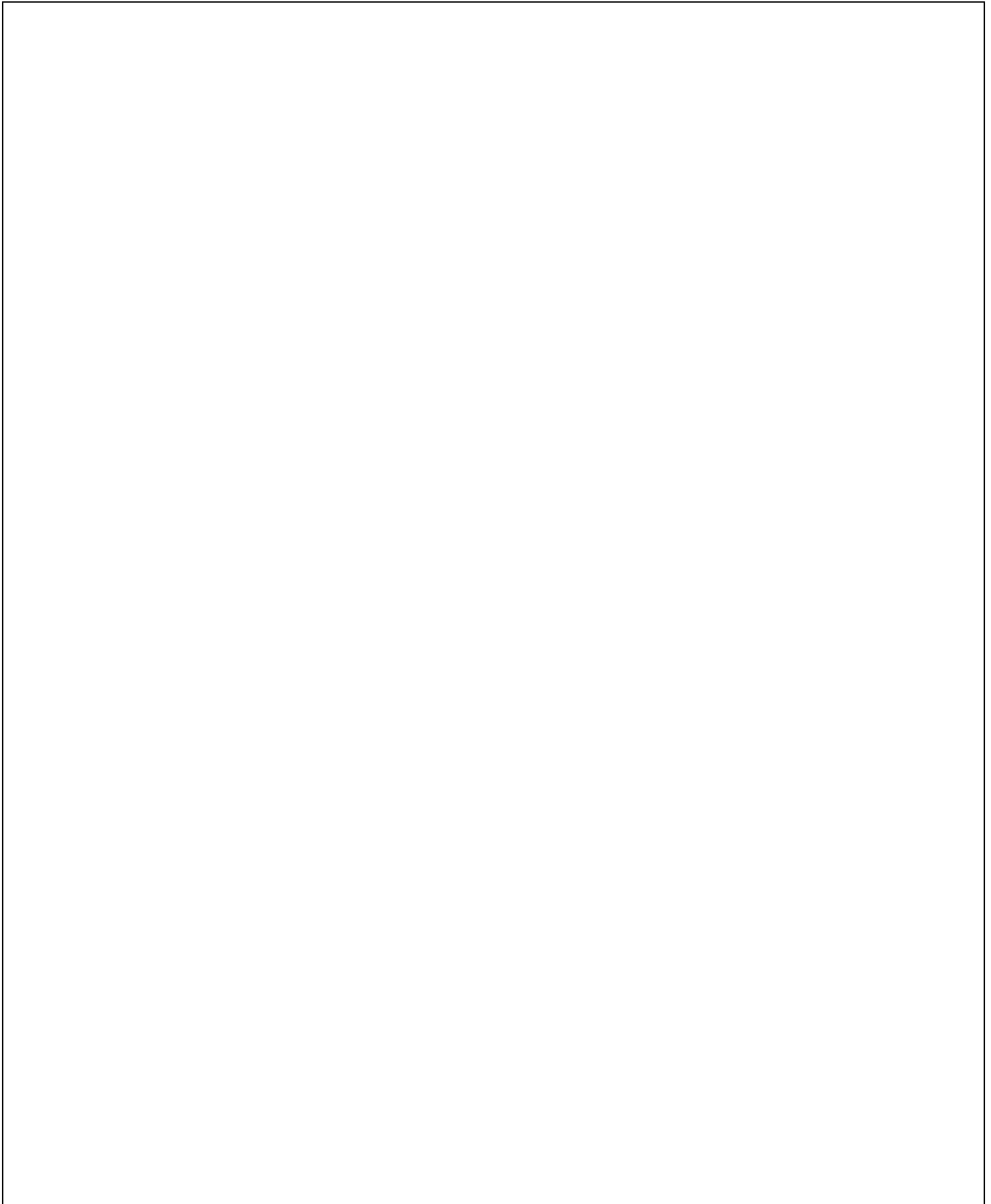
(ii) Hitung luas, dalam cm^2 , bagi $\triangle AA'D$.

Calculate the area, in cm^2 , of $\triangle AA'D$.

[6 markah]

[6 marks]

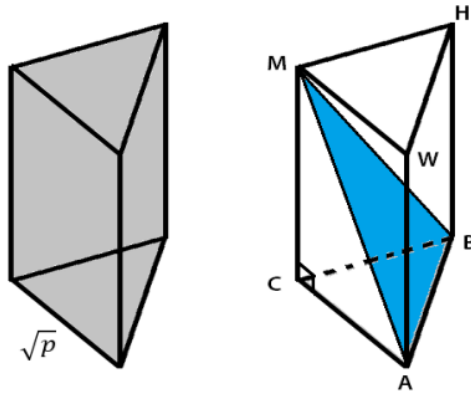
JAWAPAN :



SOALAN 8 : SOALAN PERCUBAAN SPM NEGERI PERAK 2023 (KERTAS 2)

- 13 Rajah 3 menunjukkan sebuah prisma kaca dan lakaran bagi prisma itu. Keratan rentas prisma itu berbentuk segi tiga sama sisi yang berukuran \sqrt{p} cm setiap sisi dan tinggi prisma itu ialah 8 cm. Diberi bahawa panjang AM adalah 10 cm.

Diagram 3 shows a glass prism and the sketch of the prism. The cross section of the prism is an equilateral triangle sides of \sqrt{p} cm and the height of the prism is 8 cm. Given that, the length of AM is 10 cm.



Rajah 3
Diagram 3

- (a) i Hitung nilai p .
Calculate value of p .
ii Seterusnya, tentukan luas segi tiga ABM , dalam cm^2 .
Hence, determine the area of triangle ABM , in cm^2 .
- [6 markah]
[6 marks]
- (b) Lakarkan rajah segi tiga mewakili sudut antara satah ABM dengan satah tegak $ABHW$. Seterusnya, hitung sudut tersebut.
Sketch a triangle diagram representing the angle between the plane ABM and the vertical plane $ABHW$. Hence, calculate the angle.

[4 markah]

JAWAPAN

