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SPM SEMINAR 2019

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PART 1

ADD MATHS

VIDEO PEMBELAJARAN LENGKAP DI

Tingkatan 4

Tingkatan 5

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Our Agenda for Today

Introduction

Expectation of seminar today

No Magic

- I will use 3 hours to help you understand and do well in these five Form 4 Add Math topic.
- What should you do during these 3 hours:
  1. **Listen first** then only write down the important tips
- 2. **Practices** these topics again until you fully understand it
- 3. **Challenge your friends** about the topics you have learned

"There are no secrets to success. It is the result of preparation, hard work, and learning from failure."

Colin Powell

Quadratic Function

Completing the square | Quadratic Inequality.

Completing the Square

- Max/Min point | Sketch the graph | Find inverse function

$$y = a(x - h)^2 + k$$

Quadratic Inequality

- $f(x) > 0$ | $f(x) \geq 0$ | $f(x) < 0$ | $f(x) \leq 0$

$ax^2 + bx + c < 0$

$(x + 3)(x - 5) < 0$

$-3 < x < 5$

$ax^2 + bx + c \geq 0$

$(x + 3)(x - 5) \geq 0$

$x \leq -3 \quad or \quad x \geq 5$

Questions

- Past Trial exam questions from different states - Year 2018

Terengganu 2018 - Paper 1 - Q15

15 Diagram 15 shows the graph of a quadratic function $f(x) = a(x + p)^2 + q$.
Rajah 15 *menunjukkan graf fungsi kuadratik* $f(x) = a(x + p)^2 + q$.

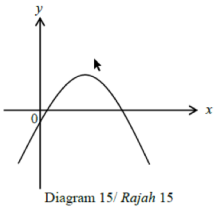


Diagram 15/ *Rajah* 15

Given the equation of the axis of symmetry is $x = 3$ and $y = 2$ is the tangent to the curve.
Diberi persamaan paksi simetri ialah $x = 3$ *dan* $y = 2$ *ialah tangen kepada lengkung itu.*

Find /*Cari*
(*a*) the range of values of *a*,
julat nilai a,

(*b*) the value of *p* and of *q*.
nilai p dan nilai q.

[3 *marks*]
[3 *markah*]

Questions

- Past Trial exam questions from different states - Year 2018

Kedah 2018 - Paper 1 – Q5

5 The quadratic function is defined by $f(x) = x^2 - 6x + k$, where k is a constant.

Fungsi kuadratik ditakrif oleh $f(x) = x^2 - 6x + k$, *dengan keadaan k ialah pemalar.*

(*a*) Express $f(x)$ in the form of $f(x) = (x + r)^2 + s$, where r and s are constant.

Ungkapkan $f(x)$ *dalam bentuk* $f(x) = (x + r)^2 + s$, *dengan keadaan* r *dan* s *ialah pemalar.*

(*b*) Given the minimum value of $f(x)$ is 6, find the value of k.

Diberi nilai minimum bagi $f(x)$ *ialah* 6, *cari nilai k .*

[4 *marks*]

Questions

- Past Trial exam questions from different states - Year 2018

Negeri Sembilan 2018 - Paper 1 - Q15

15 Diagram 5 shows the graph of quadratic function $f(x)$.
Rajah 5 *menunjukkan graf fungsi kuadratik* $f(x)$.

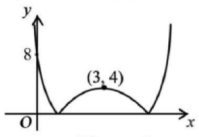


Diagram 5
Rajah 5

State the function of the graph in the form of $f(x) = |a(x + p)^2 + q|$.
Nyatakan fungsi bagi graf tersebut dalam bentuk $f(x) = |a(x + p)^2 + q|$. [3 marks]
Answer/ *Jawapan*: [3 *markah*]

Questions

- Past Trial exam questions from different states - Year 2018

MRSM 2018 - Paper 1 - Q15

15 Diagram 15 shows a football player kicked a ball 5 m from the left of the half way line of football field.
Rajah 15 *menunjukkan seorang pemain bola sepak menendang sebiji bola* 5 m *dari sebelah kiri garisan tengah padang bola.*

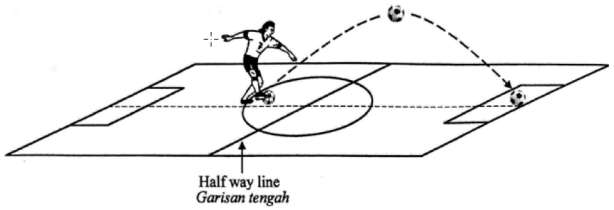


Diagram 15
Rajah 15

The locus of the ball is represented by the function $h(x) = -\frac{1}{100}x^2 + 4px - 2q + 5$. The ball reaches the maximum height of 9 m and touches the ground 60 m from where it was kicked.

Find the value of p and of q. [4 *marks*]

Log and Indices

Basic Law for Log and indices | Solving skill

Basic Law for log and Indices

Log rules | Indices rules

Basic knowledge of log

$log_a a = 1 \qquad log_a 1 = 0$

$log_a b = c$

$b = a^c$

Additional and subtraction of log

$\log ab = \log a + \log b$

$\log \frac{a}{b} = \log a - \log b$

Changing base of log

$log_a b = \frac{log_c a}{log_c b}$

$log_a b = \frac{1}{log_b a}$

Basic knowledge of Indices

$a^0 = 1$

Additional and subtraction of indices

$a^x \times a^y = a^{x+y}$

$a^x \div a^y = a^{x-y}$

Complex indices

$a^{-n} = \frac{1}{a^n} \qquad a^{\frac{x}{y}} = \sqrt[y]{a^x}$

Common mistake for log and Indices

Understanding the concept of log and Indices

$a^x + a^y = ?$

$x^3 - x^2 = ?$

$2(x+2)^2 = (2x+4)^2$ *correct?*

$\frac{\sqrt{a}}{\sqrt{b}} = \sqrt{\frac{a}{b}}$, correct?

$\log(a+b) = ?$

$\log a \times \log b = ?$

$\log x^2 = (\log x)^2$, *correct?*

$a + b = c$

$\log a + \log b = \log c$

correct?

Questions

- Past Trial exam questions from different states - Year 2018

Negeri Sembilan 2018 - Paper 1 – Q5 & Q6

5. $Given\ that\ 5^{m+2} - 5^m = \frac{3000}{5^n}.\ express\ n\ in\ terms\ of\ m.$

6. $Given\ that\ log_x\sqrt{5} = u\ and\ log_y 5 = w.$
$Express\ log_{25}\frac{x}{\sqrt{y}}\ in\ terms\ of\ u\ and\ w, as\ a\ single\ fraction.$

Kedah 2018 - Paper 1 – Q8

8. $Given\ m = 2^r\ and\ n = 2^t, express\ \log_8\frac{mn^3}{32}$ in terms of r and/or t.

Questions

- Past Trial exam questions from different states - Year 2018

Terengganu 2018 - Paper 1 – Q6,Q7&Q8

6. $Solve\ the\ equation: 27^x \times 2^{3x} = 36.$

7. $Simplify$
$$\frac{\log_m 2^3 - \log_m 3^6}{\log_m 2 - \log_m 9}$$

Kedah 2018 - Paper 2 – Q7

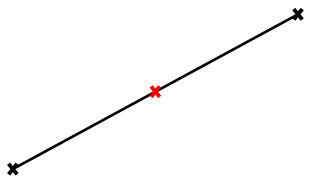
5. $(a) Given\ that\ 2^x = 3^y = 18, express\ q\ in\ term\ of\ x\ and\ y.$
$(b)\ If\ k = 1 + \frac{1}{2}\text{x and x} = \log_3 5, find\ the\ value\ of\ 9^k.$

Coordinate Geometry

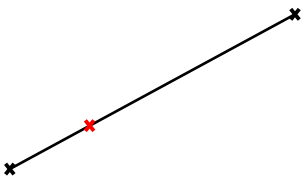
Distance | Line Segment | Equation

Line Segment

Mid Point | Ratio



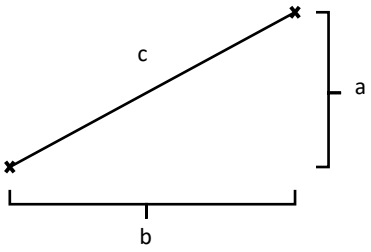
$$\left[\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}\right] = (x, y)$$



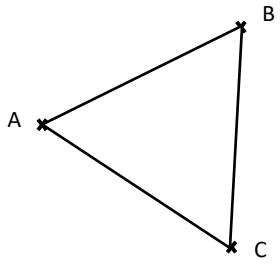
$$\left[\frac{mx_1 + nx_2}{m + n}, \frac{my_1 + ny_2}{m + n}\right] = (x, y)$$

Distance & Area

Pythagoras Theorem | Area for polygon



$$a^2 + b^2 = c^2$$



$$A = \frac{1}{2}\begin{vmatrix} A & B & C & A \\ x_1 & x_2 & x_3 & x_1 \\ y_1 & y_2 & y_3 & y_1 \end{vmatrix}$$

Forming an Equation

Gradient Form | Intercept Form | General Form

Gradient Form

$y = mx + c$

m c

Intercept Form

$\frac{x}{a} + \frac{y}{b} = 1$

a b

General Form

$ax + by + c = 0$

$y - y_1 = m(x - x_1)$

m

Perpendicular Gradient

$m_1 \times m_2 = -1$

Perpendicular Equation

$y - y_1 = m_2(x - x_1)$

Perpendicular Bisector Equation

$y - y_1 = m_2(x - x_1)$,

$Mid\ Point\ (x_1, y_1)$

Equation of Locus

Distance | Perpendicular | Ratio into Fraction

General Equation: $ax^2 + by^2 + cx + dy + e = 0$

Twice the distance: AP=2BP

$$\sqrt{(x_1 - x_2) + (y_1 - y_2)} = 2\sqrt{(x_3 - x_2) + (y_3 - y_2)}$$

AP is perpendicular to BP

$$\left(\frac{y_2 - y_1}{x_2 - x_1}\right)\left(\frac{y_3 - y_1}{x_3 - x_1}\right) = -1$$

AP:BP=1:3

$$\frac{AP}{BP} = \frac{1}{3}$$

$$\frac{\sqrt{(x_1 - x_2) + (y_1 - y_2)}}{\sqrt{(x_3 - x_2) + (y_3 - y_2)}} = \frac{1}{3}$$

Questions

- Past Trial exam questions from different states - Year 2018

Negeri Sembilan 2018 - Paper 1 - Q18

18 A straight line $\frac{x}{2} + \frac{y}{3} = 1$ cuts the x-axis and y-axis at point A and point B respectively. Given that point C($3h$, k) and the straight line BC intersects the straight line AB at 90°. Express k in terms of h.
Garis lurus $\frac{x}{2} + \frac{y}{3} = 1$ *paksi-x dan paksi-y masing-masing pada titik A dan titik B. Diberi titik C(3h, k) dan garis lures BC bersilang dengan garis lures AB pada sudut* 90° . *Ungkapkan k dalam sebutan h.* [3 marks]
Answer/ *Jawapan*: [3 markah]

Questions

- Past Trial exam questions from different states - Year 2018

Terengganu 2018 - Paper 1 - Q19

19 The points $P(3h, -h)$, $Q(p, t)$ and $R(3p, 2t)$ are on a straight line. Q divides PR internally in the ratio 1 : 3. Express p in terms of t.
Titik-titik $P(3h, -h)$, $Q(p, t)$ dan $R(3p, 2t)$ terletak pada satu garis lurus. Q membahagi dalam PR dengan nisbah 1 : 3. *Ungkapkan p dalam sebutan t.*

[3 *marks*]
[3 *markah*]

Answer/*Jawapan* :

Questions

- Past Trial exam questions from different states - Year 2018

Terengganu 2018 - Paper 1 - Q19

Diagram 11 shows the triangle OAB where O is the origin. Point C lies on the straight line AB.
Rajah 11 *menunjukkan segi tiga OAB dengan O ialah titik asalan. Titik C terletak pada garis lurus AB.*

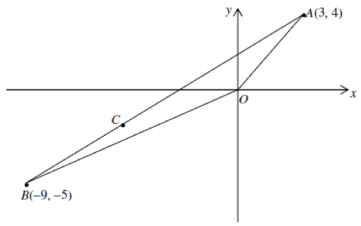


Diagram 11 / *Rajah* 11

(*a*) Calculate the area, in unit^2, of triangle OAB. [2 *marks*]
Hitung luas, dalam unit^2, *segitiga OAB.* [2 *markah*]

(*b*) Find the equation of the perpendicular bisector of line segment AB. [3 *marks*]
Cari persamaan pembahagi dua sama serenjang bagi tembereng garis AB.
[3 *markah*]

(*c*) Given that length BC is $\frac{2}{5}$ of the line segment AB, find the coordinates of point C. [2 *marks*]
Diberi panjang BC ialah $\frac{2}{5}$ *daripada tembereng garis AB, cari koordinat bagi titik C.* [2 *markah*]

(*d*) A point $P(x, y)$ moves such that $2PA = PB$. Find the equation of the locus P. [3 *marks*]

Questions

- Past Trial exam questions from different states - Year 2018

Terengganu 2018 - Paper 1 - Q19

Diagram 8 shows the straight line RQ which is perpendicular to the straight line KL at point Q.
Rajah 8 menunjukkan garis lurus RQ yang berserenjang dengan garis lurus KL pada titik Q.

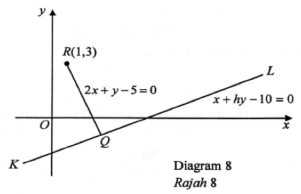


Diagram 8
Rajah 8

(a) Find
Cari

(i) the value of h,
nilai bagi h,

(ii) the coordinates of Q. [4 *marks*]
koordinat Q. [4 *markah*]

(b) The straight line RQ is extended to S such that $RQ : RS = 1 : 5$.
Find the area, in unit^2, of triangle ROS. [4 *marks*]
Garis lurus RQ dipanjangkan ke S dengan keadaan RQ : RS = 1 : 5.
Cari luas, dalam unit^2, segitiga ROS. [4 *markah*]

(c) A point T moves such that its distance from point R is always 5 units.
Find the equation of the locus of T. [2 *marks*]
Titik T bergerak dengan keadaan jaraknya dari titik R sentiasa 5 unit.
Cari persamaan lokus T. [2 *markah*]

Differentiation

Max/Min | Rate of change | Small change

Differentiation

- First Derivative using product rule, quotient rule and chain rule.

Chain Rule (Composite Function)

$y = (ax + b)^n$

$\frac{dy}{dx} = n(ax + b)^{n-1} \times \frac{d}{dx}(ax + b)$

Product Rule

$y = u \cdot v$

$\frac{dy}{dx} = u \cdot \frac{dv}{dx} + v \cdot \frac{du}{dx}$

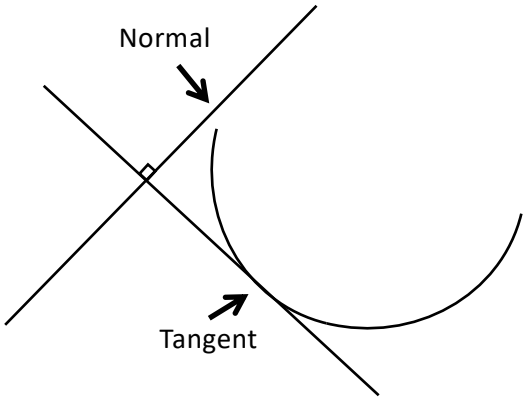
Quotient Rule

$y = \frac{u}{v}$

$\frac{dy}{dx} = \frac{v \cdot \frac{du}{dx} - u \cdot \frac{dv}{dx}}{v^2}$

Differentiation

- Equation of Tangent and Normal



Steps to get equation of tangent:

1. $\frac{dy}{dx}$
2. Sub the x-value into $\frac{dy}{dx}$ to get m_t
3. Forming the equation using
   $y - y_1 = m_t(x - x_1)$

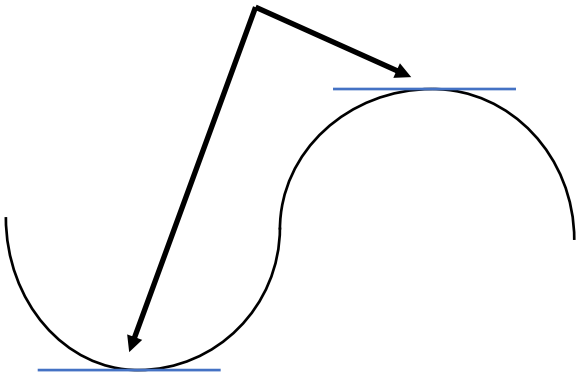
Steps to get equation of Normal:

1. $\frac{dy}{dx}$
2. Sub the x-value into $\frac{dy}{dx}$ to get m_t
3. $m_n = -\frac{1}{m_t}$
4. Forming the equation using
   $y - y_1 = m_n(x - x_1)$

Differentiation

- Max/Min and 2nd Derivative

Turning point or Stationary point



But how to determine it nature???

Steps to get equation of tangent:

1. $\frac{dy}{dx}$
2. Sub the x-value into $\frac{dy}{dx}$ to get m_t
3. Forming the equation using
$$y - y_1 = m_t(x - x_1)$$

Steps to get equation of Normal:

1. $\frac{dy}{dx}$
2. Sub the x-value into $\frac{dy}{dx}$ to get m_t
3. $m_n = -\frac{1}{m_t}$
4. Forming the equation using
$$y - y_1 = m_n(x - x_1)$$

Differentiation

- Rate of Change | Small Change | Approximation

Rate of Change
(Chain Rule)

$$\frac{dy}{dt} = \frac{dy}{dx} \times \frac{dx}{dt}$$

<u>Key word:</u>

Rate of change of x = $\frac{dx}{dt}$

Rate of change of volume = $\frac{dv}{dt}$

Rate of change of Area = $\frac{dA}{dt}$

Rate of change of radius = $\frac{dr}{dt}$

Small Change

$$\frac{\delta y}{\delta x} = \frac{dy}{dx},$$

$$\delta x = x_{new} - x_{old}$$
$$\delta y = y_{new} - y_{old}$$

Approximation

$$y_{new} = y_{old} + \delta y$$

Questions

- Past Trial exam questions from different states - Year 2018

Terengganu 2018 - Paper 2 – Q5

5 A straight line $y = 2x - 3$ is the tangent to the curve $y = x^3 + 3x^2 - 7x + 2$ at point P.
Garis lurus $y = 2x - 3$ *ialah tangen kepada lengkung* $y = x^3 + 3x^2 - 7x + 2$ *pada titik* P.

Find
Cari

(*a*) the coordinates of P, [4 *marks*]
koordinat P, [4 *markah*]

(*b*) another point at the curve that makes the tangent is parallel to the straight line $y = 2x - 3$. [3 *marks*]
satu titik yang lain pada lengkung itu supaya tangennya adalah selari dengan garis lurus $y = 2x - 3$. [3 *markah*]

Questions

- Past Trial exam questions from different states - Year 2018

Kedah 2018 - Paper 1 – Q11

11 Given $f(x) = \dfrac{x^3 - 7}{2x + 1}$, find the first derivative of $f(x)$.

Kedah 2018 - Paper 1 – Q12

12 A cornical container of radius 8 cm and height 16 cm is filled with water. At the same time, water seems to leak away from the vertex of the cone. If the level of the water decreases from 4 cm to 3·9 cm, find the approximate change in volume of the water in the cone?

Questions

- Past Trial exam questions from different states - Year 2018

Terengganu 2018 - Paper 1 – Q2

2 Pak Man bought 540 m of steel wire to fence his land into three parts of equal rectangles, as shown in Diagram 2. Given the area of the three parts is A m^2.
Pak Man membeli 540 m *dawai besi untuk memagar tanahnya kepada tiga bahagian segi empat tepat yang sama seperti di dalam Rajah* 2. *Diberi luas tiga bahagian itu ialah* A m^2.

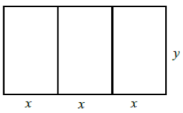


Diagram 2 / *Rajah* 2

(*a*) Express
Ungkapkan

(i) y in terms of x.
y dalam sebutan x.

(ii) A in terms of x.
A dalam sebutan x.

(*b*) Hence, find the value of x when the area of A is maximum.
Seterusnya, cari nilai bagi x apabila luas A adalah maksimum.

[4 *marks*]
[4 *markah*]

Questions

- Past Trial exam questions from different states - Year 2018

MRSM 2018 - Paper 1 – Q11

11 A manufacturing company produces and sells tables. The cost function is given by $C(x) = 1500 - \frac{x^3}{3} + 65x^2$, where x is the number of table produced. Each table is sold at a price of RM3000.
Sebuah syarikat pembuatan menghasilkan dan menjual meja. Fungsi kos diberi oleh $C(x) = 1500 - \frac{x^3}{3} + 65x^2$, *dengan keadaan x mewakili bilangan meja yang dihasilkan. Setiap meja dijual dengan harga* RM 3000.

Find
Cari

(*a*) the profit function, [3 *marks*]
fungsi keuntungan, [3 *markah*]

(*b*) the maximum number of tables to be produced to gain a maximum profit, [5 *marks*]
bilangan meja yang maksimum untuk dihasilkan bagi memperolehi keuntungan maksimum, [5 *markah*]

(*c*) the maximum profit that can be obtained. [2 *marks*]
keuntungan maksimum yang boleh diperolehi. [2 *markah*]

Questions

- Past Trial exam questions from different states - Year 2018

Practices Bestari 2018 - Paper 2 – Q10

10 Diagram 10 shows a round bottom flask of radius 12 cm. Water is poured into the flask such that the height of the water level from its base, h cm, increases at the rate of 0.2 cms^{-1}.

Rajah 10 *menunjukkan kelalang dasar bulat dengan jejari* 12 cm. *Air di dimasukkan ke dalam kelalang tersebut dengan keadaan tinggi paras air dari dasar kelalang,* h *cm, meningkat dengan kadar* 0.2 cm^{-1}.

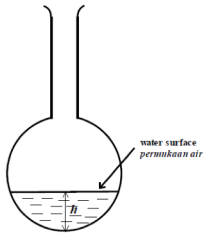


Diagram 9/ *Rajah* 9

(a) Show that the area of the surface, A cm^2, it given by $A = \pi(24h - h^2)$.

Tunjukkan luas permukaan air, A cm^2, *diberi sebagai* $A = \pi(24h - h^2)$.

[4 marks/*markah]*

(b) Find /*cari*

(i) the approximate increases in the area of the surface water if the height increases from 4 cm to 4.05 cm.
cari tokokan hampir bagi luas permukaan air, jika ketinggian air menokok daripada 4 cm *kepada* 4.05 cm.

(ii) the rate of increases of the area of the water surface at $h = 2$.
kadar tokokan luas permukaan air ketika $h = 2$

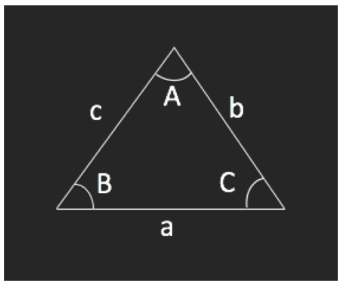
[6 marks/*markah*]

Solution of Triangle

Sine Rule | Cosine rule | Area of Triangle

Solution of Triangle

Sine Rule | Cosine Rule | Area of Triangle



Sine Rule

$$\frac{a}{\sin A} = \frac{b}{\sin B}$$

$$\frac{\sin A}{a} = \frac{\sin B}{b}$$

Area of Triangle

$$A = \frac{1}{2}ab(\sin C)$$

Cosine Rule

$$a^2 = b^2 + c^2 - 2bc(\cos A)$$

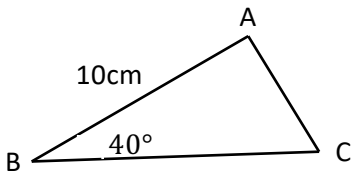
$$\cos A = \frac{b^2 + c^2 - a^2}{2bc}$$

Solution of Triangle

Ambiguous Case of a Triangle

Ambiguous Case of a Triangle:
Forming two different type of triangle from the information given.

Example 1:
In a triangle ABC, $\measuredangle A = 43°, a = 4cm \text{ and } b = 7cm$,
sketching two different type of triangle.



Example 2:
Point C' lies on BC such that AC'=AC.
(i) Sketch the triangle ABC'
(ii) Calculate the area of triangle ABC'

Questions

- Past Trial exam questions from different states - Year 2018

Kedah 2018 - Paper 2 – Q13

13 Diagram 13 shows two triangles *PQR* and *PST*.
Rajah 13 *menunjukkan dua buah segi tiga PQR dan PST.*

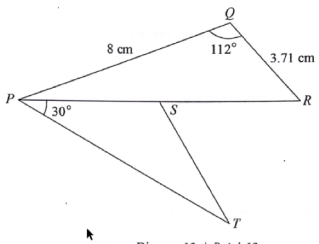


Diagram 13 / *Rajah* 13

It is given that $SP = SR = ST$.
Diberi bahawa $SP = SR = ST$.

(*a*) Calculate
Hitung

(i) the length, in cm, of *SR*,
panjang, dalam cm, *bagi SR,* [2 *marks*] [2 *markah*]

(ii) perimeter, in cm, of the diagram *PQRST*.
perimeter, dalam cm, *bagi rajah PQRST.* [4 *marks*] [4 *markah*]

(*b*) (i) Sketch a triangle $P'S'T'$ which has a different shape from triangle *PST* such that $P'T' = PT$, $S'T' = ST$ and $\angle T'P'S' = \angle TPS$.
Lakar sebuah segi tiga $P'S'T'$ *yang mempunyai bentuk berbeza daripada segi tiga PST dengan keadaan* $P'T' = PT$, $S'T' = ST$ *dan* $\angle T'P'S' = \angle TPS$.
[1 *mark*] [1 *markah*]

(ii) Hence, find the area, in cm^2, of the triangle $P'S'T'$.
Seterusnya, cari luas, dalam cm^2, *bagi segi tiga* $P'S'T'$. [3 *marks*] [3 *markah*]

Questions

- Past Trial exam questions from different states - Year 2018

MRSM 2018 - Paper 2 – Q14

14 Solution by scale drawing is not accepted.
Penyelesaian secara lukisan berskala tidak diterima.
Diagram 14 shows a tetrahedron *ABCD* such that $\angle BAC = 64°$, $\angle ACD = 35°$, $\angle BDC = 104°$, $AB = 8$ cm and $BD = 15$ cm.
Rajah 14 *menunjukkan sebuah tetrahedron ABCD dengan keadaan* $\angle BAC = 64°$, $\angle ACD = 35°$, $\angle BDC = 104°$, $AB = 8$ cm *dan* $BD = 15$ cm.

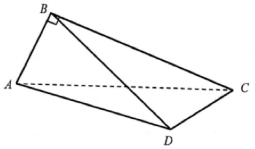


Diagram 14
Rajah 14

It is given that the area of triangle *BCD* is 29·1 cm^2 and *ABC* is a right angle triangle.
Diberi bahawa luas segi tiga BCD ialah 29·1 cm^2 *dan ABC adalah segi tiga bersudut tegak.*

(*a*) Calculate
Hitung

(i) the length, in cm, of *CD*,
Panjang, dalam cm, *bagi CD,*

(ii) the length, in cm, of *AD*,
panjang, dalam cm, *bagi AD,*

(iii) $\angle CAD$. [7 *marks*] [7 *markah*]

(*b*) Point *C'* lies on *AC* such that $DC' = DC$.
Titik C' terletak pada AC dengan keadaan $DC' = DC$.

(i) Sketch the triangle $\Delta ADC'$.
Lakar segi tiga $\Delta ADC'$.

(ii) Calculate the length, in cm, of *AC'*.
Hitung panjang, dalam cm, *bagi AC'*. [3 *marks*] [3 *markah*]

Borang Maklum Balas Sesi Seminar SPM BACfreeschool

Sila lengkapkan borang penilaian bagi Seminar SPM yang telah anda hadiri. Penilaian anda dapat membantu kami memahami tahap keberkesanan program ini dan seterusnya membolehkan kami meningkatkan kualiti perkhidmatan kami di masa hadapan.

Terima kasih!

Please fill up this form for the session that you are attending. Your evaluation will help us improve our service and help us understand the effectiveness of this program.

Thank you!

1. Nombor Telefon
Phone Number

2. Apakah subjek bagi seminar yang sedang anda sertai sekarang?
What is the seminar's subject that you're attending now?

- ◯ Bahasa Malaysia
- ◯ English
- ◯ Sejarah
- ◯ Sains
- ◯ Science
- ◯ Matematik
- ◯ Mathematics
- ◯ Biologi
- ◯ Biology
- ◯ Kimia
- ◯ Chemistry
- ◯ Fizik
- ◯ Physics
- ◯ Matematik Tambahan
- ◯ Additional Maths
- ◯ Perniagaan
- ◯ Prinsip Perakaunan
- ◯ Ekonomi

3. Pernahkah anda menonton mana-mana video BACfreeschool (sebelum ini dikenali sebagai EduNation)?
Have you ever watched any BACFreeschool's (previously known as EduNation) videos?

- ◯ Ya
  Yes
- ◯ Tidak
  No

4. Nilai kefahaman guru terhadap isi kandungan yang diajar bagi subjek ini.
Rate the teacher's understanding of this particular subject.

Sangat Rendah *Very Low*	Rendah *Low*	Sederhana *Intermediate*	Tinggi *High*	Sangat Tinggi *Very High*
◯	◯	◯	◯	◯

5. Nilai cara penyampaian guru bagi subjek ini.
Rate the teacher's delivery of the subject.

Sangat Tidak Menarik *Very Uninteresting*	Tidak Menarik *Not Interesting*	Sederhana *Intermediate*	Menarik *Interesting*	Sangat Menarik *Very Interesting*
◯	◯	◯	◯	◯

6. Nilai tahap kepuasan terhadap nota tambahan yang telah diberikan.
Rate your satisfaction level with the notes given.

Sangat Tidak Berpuashati *Very Unsatisfied*	Tidak Berpuashati *Not Satisfied*	Sederhana *Intermediate*	Berpuashati *Satisfied*	Sangat Berpuashati *Very Satisfied*
◯	◯	◯	◯	◯

7. Nilai tahap kebergunaan isi kandungan seminar.
Rate the usefulness of the seminar's content to your SPM preparation.

Sangat Tidak Berguna *Not Very Useful*	Tidak Berguna *Not Useful*	Sederhana *Intermediate*	Useful *Berguna*	Sangat Useful *Very Useful*
◯	◯	◯	◯	◯

8. Bagi pendapat anda, 3 jam untuk satu sesi seminar adalah...
In your opinion, 3 hours per session is...

- ◯ terlalu pendek.
  too short.
- ◯ bersesuaian.
  just right.
- ◯ terlalu panjang.
  too long.

9. Adakah anda mempunyai sebarang maklum balas/komen bagi meningkatkan prestasi kami?
Do you have any additional comments, questions, or concerns you would like to share?