

JOHOR**NISBAH & FUNGSI TRIGONOMETRI****N9**

- (a) Pada ruang jawapan, lakarkan graf fungsi $y = 2 \sin 2x$ bagi $0^\circ \leq \theta \leq 360^\circ$
In the answer space, draw the graph of the function $y = 2 \sin 2x$ for $0^\circ \leq \theta \leq 360^\circ$

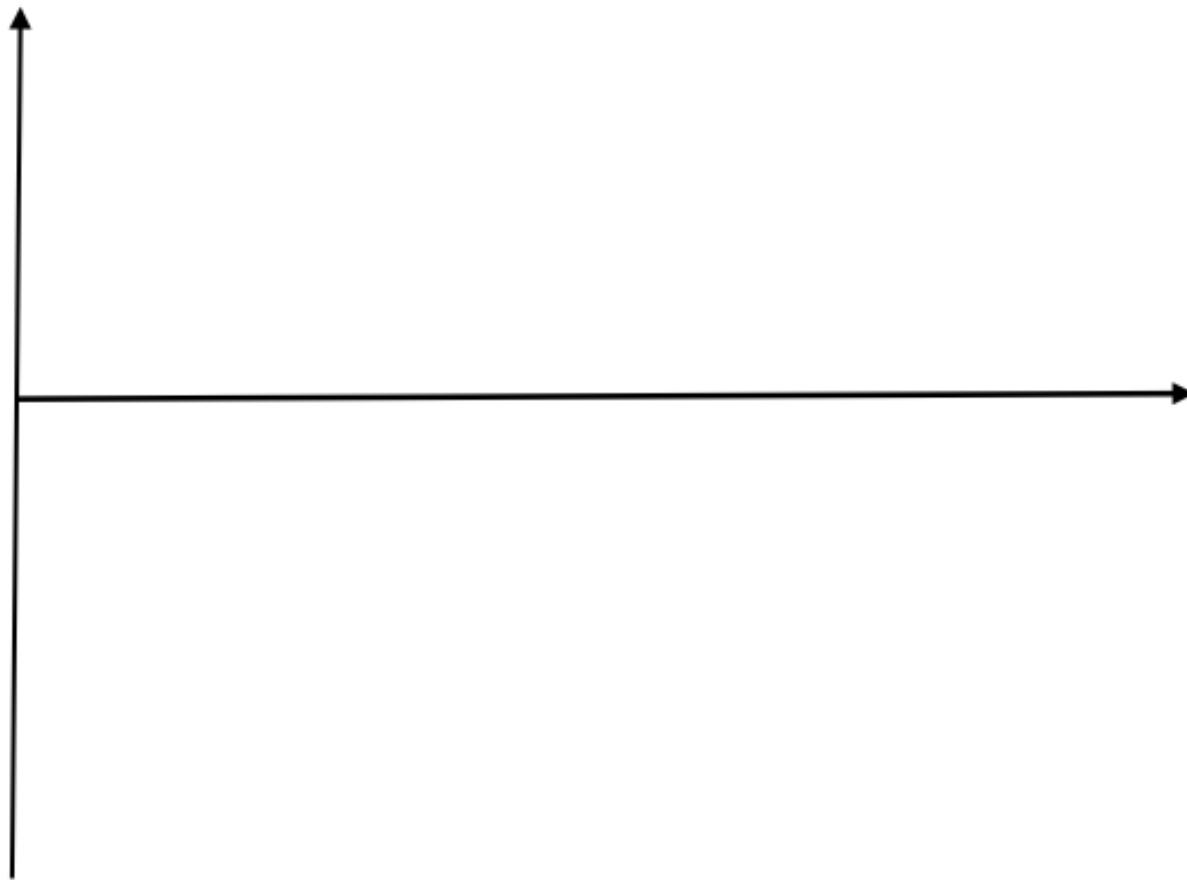
- (b) Dari graf fungsi $y = 2 \sin 2x$, tentukan
From the graph of the function $y = 2 \sin 2x$, determine

- (i) Amplitud
Amplitude
 (ii) Tempoh
Period

[5 markah / marks]

Jawapan / Answer:

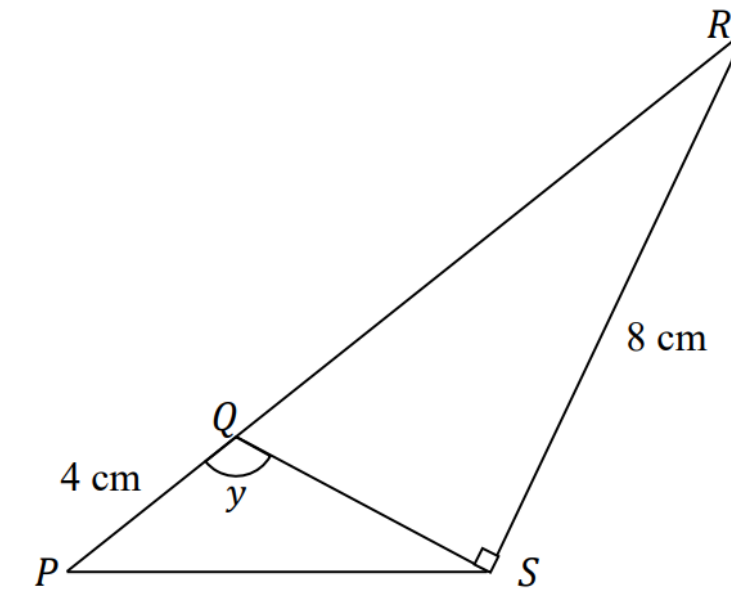
(a)



- 1 Dalam Rajah 1 di bawah, PQR ialah garis lurus. Diberi bahawa $PQ:QR = 2:5$, cari kos y .
In Diagram 1 below, PQR is a straight line. Given $PQ:QR = 2:5$, find $\cos y$.

[3 markah]

[3 marks]

Rajah 1
Diagram 1

#FREEPALESTINE

NISBAH & FUNGSI TRIGONOMETRI

PAHANG

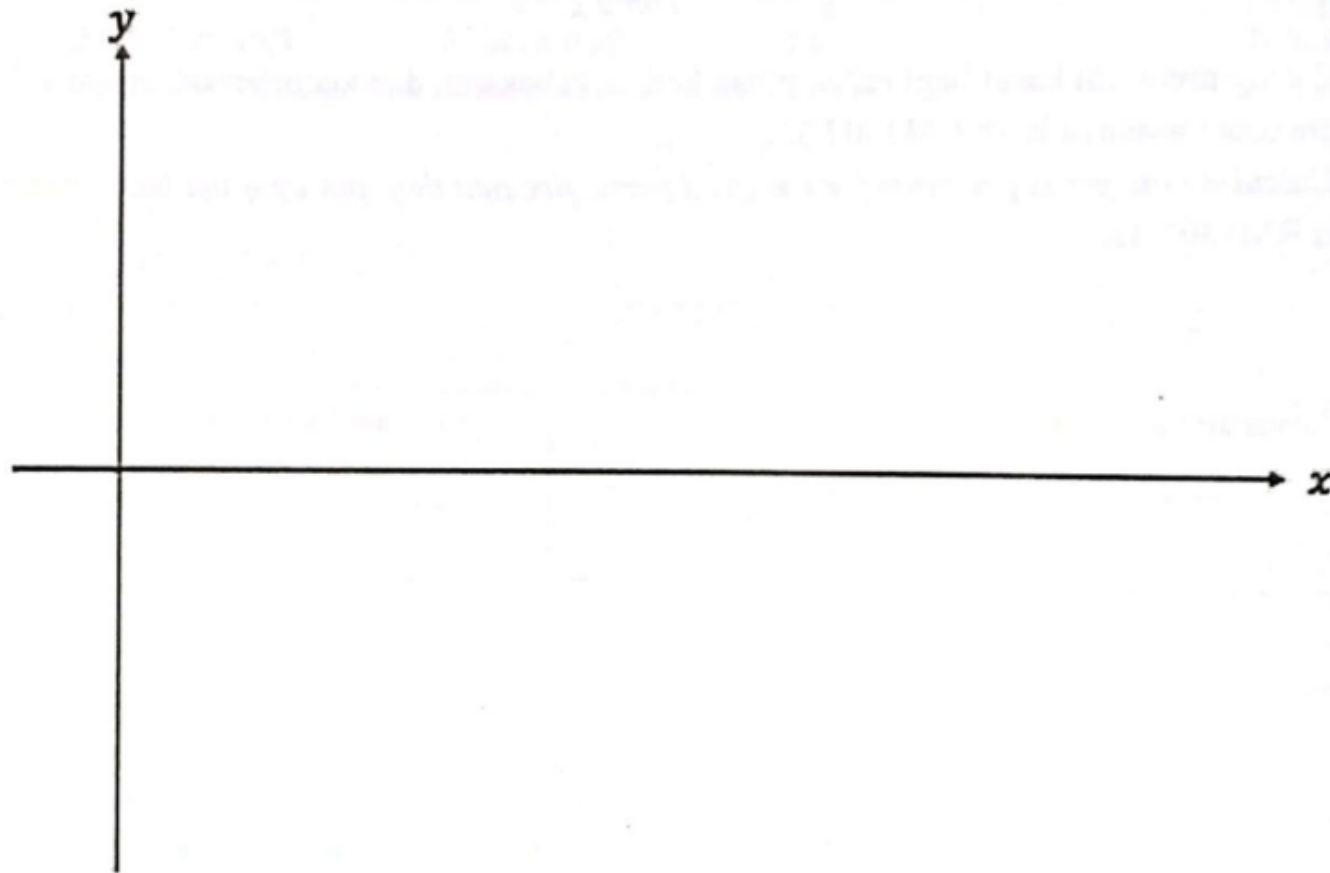
- 5 Pada Rajah 4 di ruang jawapan, lakarkan graf bagi $y = 3 \sin 2x - 1$ untuk $0 \leq x \leq 360^\circ$.
Seterusnya tentukan amplitud dan tempoh bagi graf fungsi trigonometri tersebut.

In Diagram 4 in the answer space, sketch the graph of $y = 3 \sin 2x - 1$ for $0 \leq x \leq 360^\circ$.

Hence, determine the amplitude and duration of the graph of the trigonometric function.

[5 markah/marks]

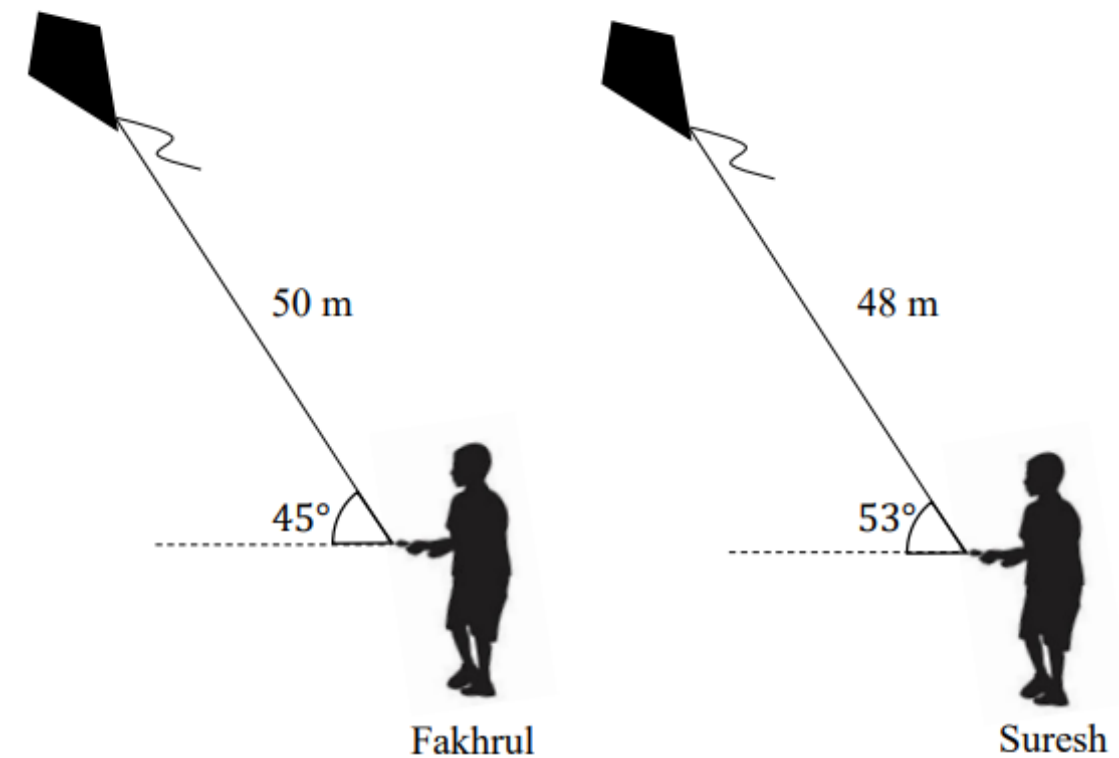
Jawapan / Answer :



N9

- (b) Fakhrul dan rakannya Suresh, menerbangkan layang-layang mereka pada kawasan lapang yang sama tinggi. Mereka ingin mengenalpasti layang-layang kepunyaan siapa yang lagi tinggi. Dengan mengukur tali layang-layang dan sudut seperti Rajah 9.2, hitung dan tentukan layang-layang siapa yang lagi tinggi.

Fakhrul and his friend, Suresh flies their kite on a plane ground of the same height. Both of them wanted to determine whose kite is the highest. By measuring the kite's line and angle as shown in Diagram 9.2. Calculate and determine whose kite is higher.



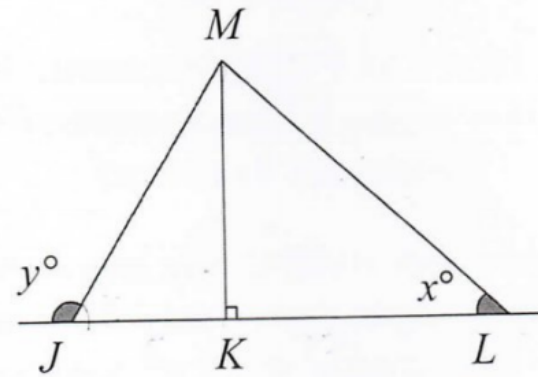
Rajah 9.2
Diagram 9.2

[5 markah]

NISBAH & FUNGSI TRIGONOMETRI

PERAK

- 9 Rajah 4 menunjukkan satu garis lurus, JKL dengan panjang 18 cm.
Diagram 4 shows a straight line, JKL with a length of 18 cm.



Rajah 4 / Diagram 4

Diberi $\cos y^\circ = -0.3746$ dan nisbah $JK : KL = 1 : 2$. Hitung
Given $\cos y^\circ = -0.3746$ and ratio $JK : KL = 1 : 2$. Calculate

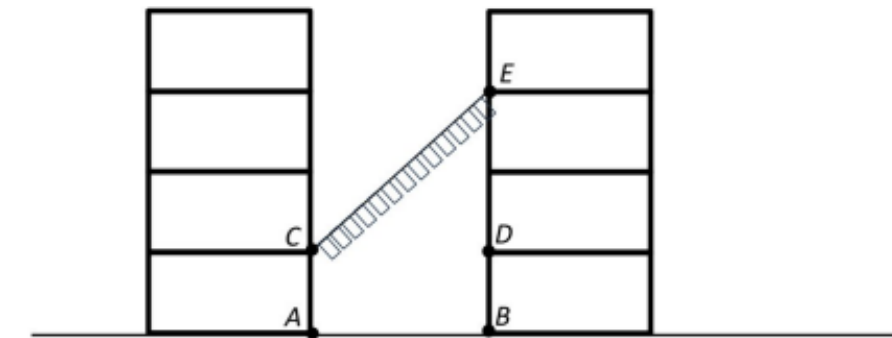
[4 markah / marks]

- (a) panjang KM
length of KM
(b) $\tan x^\circ$

PERLIS

- 10 Sempena bulan kemerdekaan, Kelab Rukun Negara sekolah telah menggantung bendera merentangi antara dua blok bangunan sekolah. Bendera tersebut diikat pada titik C di tingkat dua bangunan ke titik E di tingkat tiga bangunan. Rajah 5 menunjukkan keadaan tersebut.

In conjunction with independence month, the school's Rukun Negara Club has hanging a flag stretching between two blocks of the school building. The flag is tied from point C at the second floor of the building to point E at the third floor of the building. Diagram 5 shows the situation.



Rajah 5
Diagram 5

Diberi jarak antara blok bangunan ialah 20 meter dan tinggi setiap tingkat ialah 5 meter. Berdasarkan maklumat tersebut,
Given the distance between building blocks is 20 meters and the height of each floor is 5 meters. Based on the information.

Cari,

Find,

- (a) Panjang tali bendera dari titik C ke titik E .

[2 markah]

The length of the flag rope from point C to point E .

[2 marks]

- (b) Namakan sudut dongak titik E dari titik A . Seterusnya hitung nilai sudut itu.

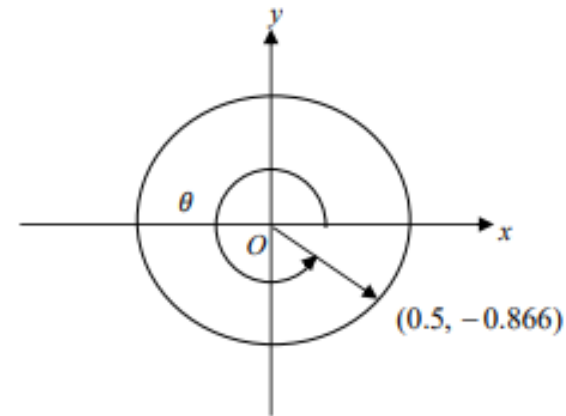
[3 markah]

Name the elevation angle of point E from point A . Then calculate the value of the angle.

[3 marks]

SMKA/SABK SET 1

- 5 (a) Rajah 4.1 menunjukkan satu bulatan unit yang berpusat O .
Diagram 4.1 shows a unit circle with centre O .



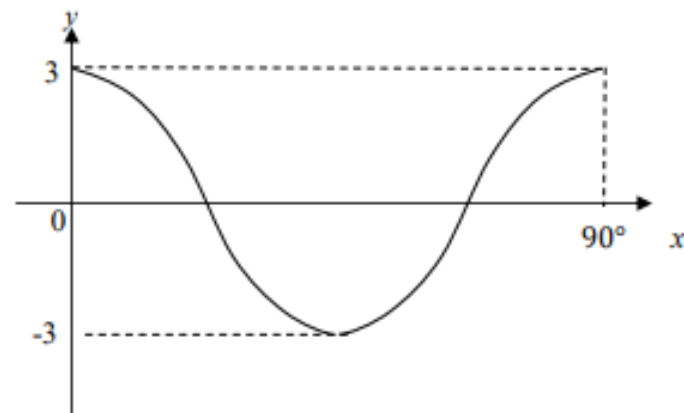
Rajah 4.1
Diagram 4.1

Tentukan nilai θ dan $\tan \theta$.

Determine the value of θ and $\tan \theta$.

[2 markah]
[2 marks]

- (b) Rajah 4.2 menunjukkan graf $y = p \cos qx$ untuk $0^\circ \leq x \leq 90^\circ$.
Diagram 4.2 shows the graph of $y = p \cos qx$ for $0^\circ \leq x \leq 90^\circ$.



Rajah 4.2
Diagram 4.2

Nyatakan nilai-nilai bagi

State the value of

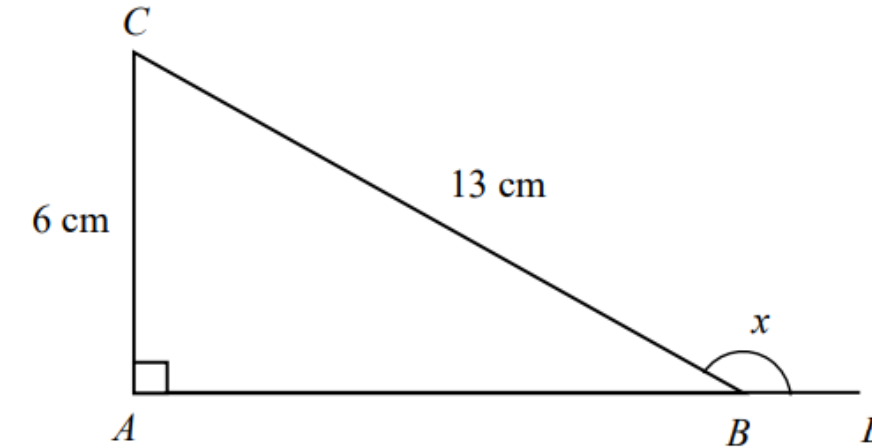
- (i) p
(ii) q

[2 markah]
[2 marks]

NISBAH & FUNGSI TRIGONOMETRI

SMKA/SABK SET 1

- 9 Rajah 6 menunjukkan segi tiga bersudut tegak ABC . Diberi ABD ialah garis lurus dan $AD = BC$.
The Diagram 6 shows a right-angled triangle ABC . Given ABD is a straight line and $AD = BC$.



Rajah 6
Diagram 6

- (a) Cari panjang BD .
Find the length of BD .
- (b) Cari nilai bagi
Find the value for
- (i) $\sin x$
(ii) $\tan x$

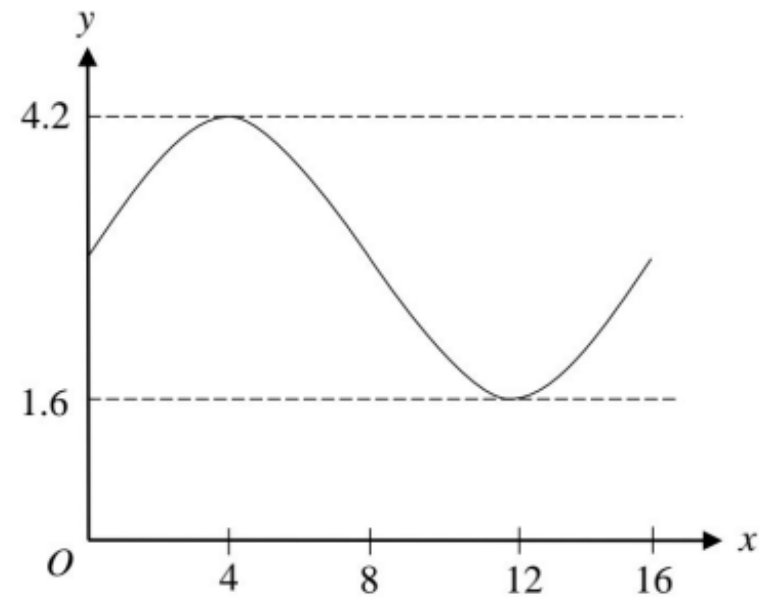
[4 markah]

NISBAH & FUNGSI TRIGONOMETRI

TERENGGANU MPP3

KEDAH

- 7 Rajah 5 menunjukkan aras air yang direkodkan di sebuah limbungan kapal. Diberi y mewakili aras air, dalam meter dan x mewakili masa, dalam jam.
Diagram 5 shows the water level recorded in a dockyard. Given that y represents the water level, in metre and x represents time, in hours.



Rajah 5
Diagram 5

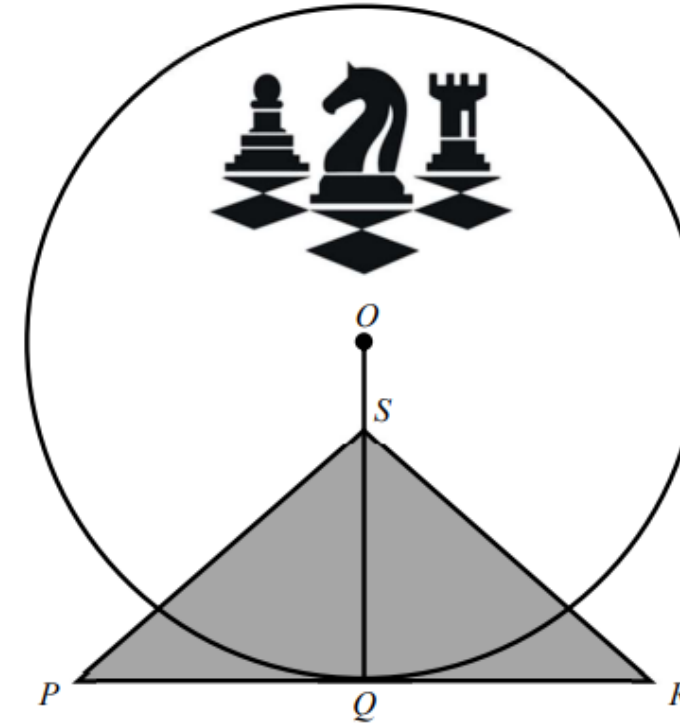
Nyatakan
State

- (a) amplitud aras air,
the amplitude of the water level,
- (b) tempoh aras air,
the period of the water level,
- (c) fungsi trigonometri bagi graf tersebut dalam bentuk $y = a \sin bx + c$.
the trigonometric function of the graph in the form of $y = a \sin bx + c$.

[3 markah]

- (d) Rajah 17.2 menunjukkan logo yang akan dicetak oleh Syarikat Megah pada sebuah buku yang ditempah oleh sebuah kelab catur. O ialah pusat bulatan bagi logo itu.

Diagram 17.2 shows the logo that Syarikat Megah will print on a book ordered by a chess club. O is the centre of the circle of the logo.



Rajah / Diagram 17.2

Diberi bahawa segi tiga PSR ialah segi tiga sama kaki dan PQR ialah tangen kepada bulatan bagi logo itu. Hitung,

Given that triangle PSR is an isosceles triangle and PQR is a tangent to the circle of the logo. Calculate,

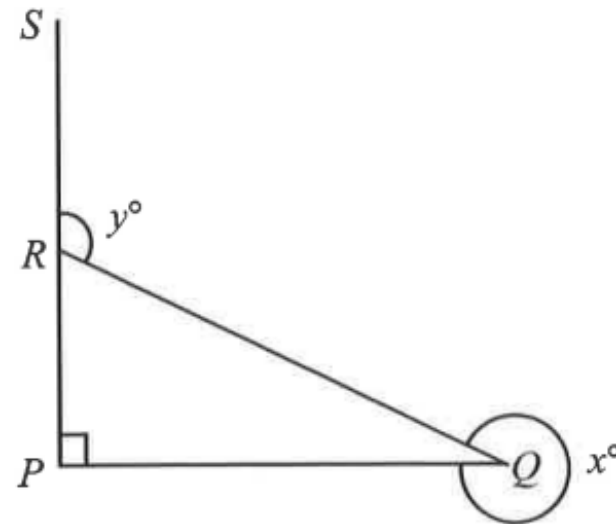
- (i) panjang SR jika panjang PR ialah 16 cm dan luas PSQ ialah 40 cm^2 .
the length of SR if the length of PR is 16 cm and the area of PSQ is 40 cm^2 .
- (ii) $\angle OSP$

[5 markah / marks]

SBP

NISBAH & FUNGSI TRIGONOMETRI

- 4 Rajah 3 menunjukkan segitiga bersudut tegak, PQR dan PRS ialah garis lurus.
Diagram 3 shows a right-angled triangle, PQR and PRS is a straight line.



Rajah 3
Diagram 3

Diberi $\cos y^\circ = -\frac{7}{25}$.

Hitung nilai bagi $\tan x^\circ$. Seterusnya, tentukan nilai x .

Given $\cos y^\circ = -\frac{7}{25}$.

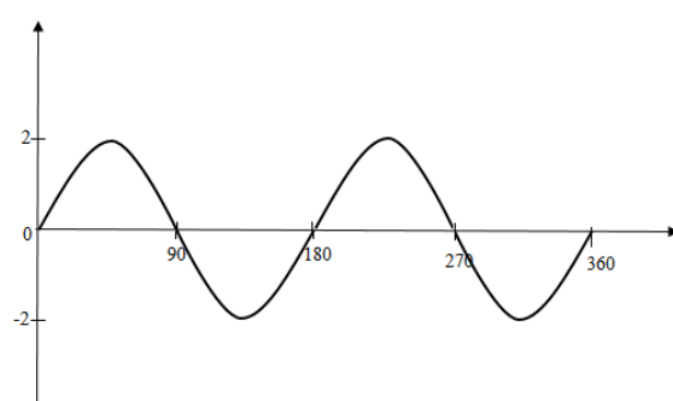
Calculate the value of $\tan x^\circ$. Hence, determine the value of x .

[4 markah]

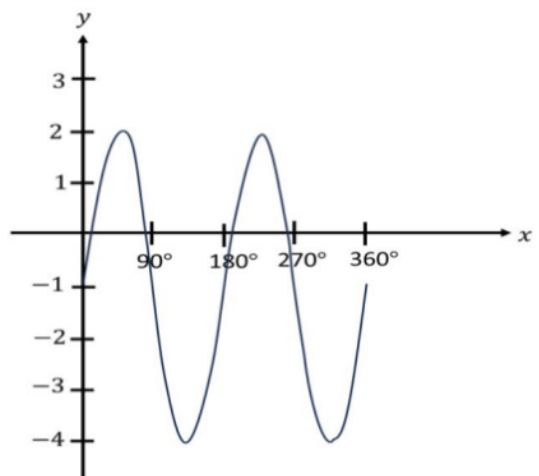
[4 marks]

SKEMA JAWAPAN: NISBAH & FUNGSI TRIGONOMETRI

JOHOR

7.	(a)			
		Bentuk graf yang betul	1	
		Amplitud 2 dan -2 dilabel pada paksi-y	1	
		Sudut 90°, 180°, 270°, 360° dilabel pada paksi-x	1	
	(b)i	2	1	
		ii) 180°	1	5

PAHANG

5			
		Skala dilukis betul untuk $0^\circ \leq x \leq 360^\circ$ dan $-4 \leq y \leq 2$	1
		Graf $y = 3 \sin 2x - 1$ dilukis dengan betul	2
		Nota : Graf $y = 3 \sin 2x$ atau $y = \sin 2x$ dilukis dengan betul beri 1m.	
		Amplitud = 3	1
		Tempoh = 180°	1

PERAK

9	(a)	68°	1
		$6 \times \tan 68^\circ$	1
		14.85	1
	(b)	$\frac{14.85}{12}$ atau 1.24 atau setara	1

PERLIS

10	(a)	$\sqrt{20^2 + 10^2}$	1	2
		= 22.36	1	
	(b)	$\angle BAE @ \angle EAB$	1	3
		$\tan \angle BAE = \frac{15}{20}$	1	
		36.87°	1	
				5

SMKA/SABK SET 1

5	(a)	$\theta = 330^\circ$	1
		$\tan \theta = -0.5774$	1
	(b)	(i) 3	1
		(ii) 4	1

SMKA/SABK SET 2

9	(a)	$\sqrt{13^2 - 6^2}$	1
		1.47 cm	1
	(b)	(i) $\frac{6}{13}$	1
		(ii) -0.52	1

SKEMA JAWAPAN: NISBAH & FUNGSI TRIGONOMETRI

KEDAH

(d)	(i)	$\frac{1}{2} \times 8 \times x = 40$ <u>atau</u> 10 $\sqrt{8^2 + 10^2}$ <u>atau</u> setara 12.81	1m 1m 1m
	(ii)	$\tan \theta = \frac{8}{10}$ <u>atau</u> 38.66° <u>atau</u> setara 141.34° <u>atau</u> setara. <i>Nota:</i> Jawapan betul tanpa jalan kerja, terima 0m	1m 1m

TERENGGANU MPP3

7	(a)	1.3	1M
	(b)	16	1M
	(c)	$y = 1.3 \sin 22.5x + 2.9$	1M

SBP

4	$\sqrt{25^2 - 7^2}$ <u>atau</u> setara	K1
	$-\frac{7}{24}$ <u>atau</u> -0.2917	N1
	$360 - \tan^{-1}\left(\frac{7}{24}\right)$ <u>atau</u> setara	K1
	343.74° <u>atau</u> $343^\circ 44'$	N1