

PENGUKURAN
Measurement

1.1 Kuantiti Fizik
Physical Quantities

1 Antara berikut, manakah yang merupakan kuantiti skalar?
Which of the following is a scalar quantity?

A Daya
Force

B Berat
Weight

C Panjang
Length

D Momentum

2 Antara berikut yang manakah kesemuanya kuantiti asas?
Which of the following are all base quantities?

A Kematan cahaya
Luminous intensity

B Jisim, panjang, pecutan, masa, arus elektrik
Mass, length, acceleration, time, electric current

C Jisim, panjang, pecutan, suhu termodinamik, keamatan berluminositi
Mass, length, acceleration, thermodynamic temperature, luminous intensity

D Jisim, panjang, arus elekrik, suhu termodinamik, keamatan berluminositi
Mass, length, electric current, thermodynamic temperature, luminous intensity

3 "Arus, Jarak, Tenaga dan Tekanan" merupakan contoh bagi
"Current, Distance, Energy and Pressure" are examples of

A Kuantiti Asas
Base Quantity

B Kuantiti Skalar
Scalar Quantity

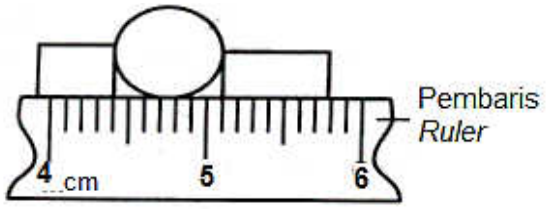
C Kuantiti Vektor
Vector Quantity

D Kuantiti Terbitan
Derived Quantity

4 Antara pasangan berikut, yang manakah menunjukkan pasangan kuantiti fizik dengan unit yang betul?
Which of the following pair shows physical quantity and its unit correctly?

	Kuantiti fizik *Physical quantity*	Unit
A	Pecutan *Acceleration*	ms^{-1}
B	Berat *Weight*	kg
C	Arus elektrik *Electric current*	A
D	Suhu termodinamik *thermodynamic temperature*	^{o}c

6 Rajah 6 menunjukkan kaedah mengukur jejari sebiji guli dengan menggunakan pembaris.
Diagram 6 shows the method of measuring the radius of a marble using a ruler.



Rajah 6 / *Diagram* 6

(a) Namakan kuantiti fizik yang diukur oleh pembaris?
Name the physical quantity measured by the ruler?

……..
[1 markah/1 *mark*]

(b) Apakah nilai yang diwakili oleh setiap pembahagian kecil skala itu?
What is the value represented by one small division of the scale?

……
[1 markah/1 *mark*]

(c) Nyatakan jejari guli tersebut.
State the radius of the marble.

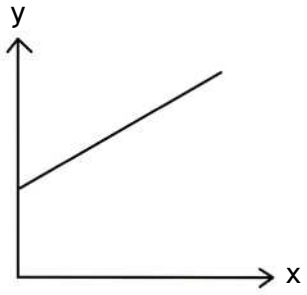
……
[1 markah/1 *mark*]

(d) Bagaimanakah meningkatkan kejituan ukuran apabila sedang mengambil bacaan?
How to increase the accuracy of the reading when the reading is taken?

……..
[1 markah/1 *mark*]

1.2 Penyiasatan Saintifik
Scientific Investigation

1 Rajah 1 menunjukkan graf y melawan x.
Diagram 1 *shows a graph* y *against* x.

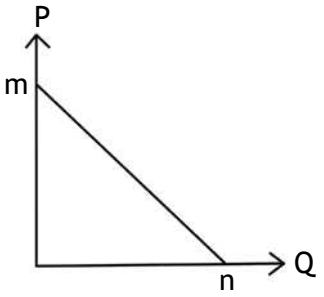


Rajah 1 / *Diagram* 1

Apakah hubungan bagi graf di atas?
What is the relationship for the graph above?

A y berkadar terus dengan x
y directly proportional to x
B y berkadar songsang dengan x
y inversely proportional to x
C y berkurang secara linear dengan x
y decreases linearly with x
D y bertambah secara linear dengan x
y increase linearly with x

2 Rajah 2 menunjukkan hubungan atara kuantiti P dan Q
Diagram 2 shows relationship between quantity P and Q



Rajah 2 / *Diagram* 2

Antara berikut yang manakah menunjukkan persamaan yang betul?
Which of the following equation is true based on the graph?

A $P = \frac{n}{m}Q + m$

B $P = \frac{m}{n}Q + n$

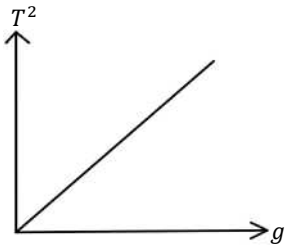
C $P = -\frac{m}{n}Q + m$

D $P = -\frac{n}{m}Q + m$

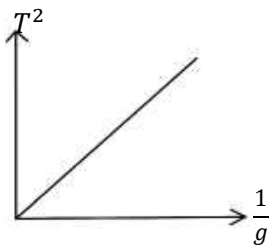
3 Formula menunjukkan hubungan antara tempoh ayunan bandul dengan beberapa kuantiti fizik yang lain. Manakah antara graf berikut adalah benar?
The formula shows the relationship between the period of oscillation of a pendulum and several other physical quantities. Which of the following graph is true?

$$T^2 = \frac{4\pi^2 l}{g}$$

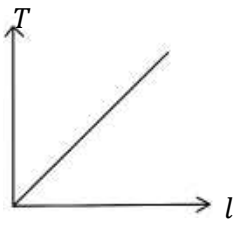
A



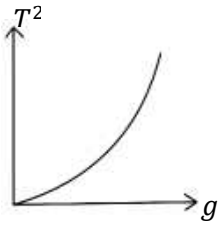
B



C



D

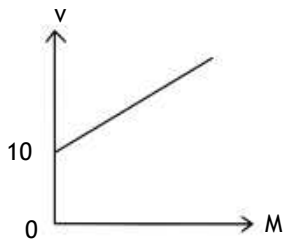


4 Persamaan di bawah menunjukkan hubungan antara jarak imej, v dengan pembesaran, M untuk sebuah kanta cembung.
Formula below shows the relationship between image distance, v *and magnification,* M *for a convex lens.*

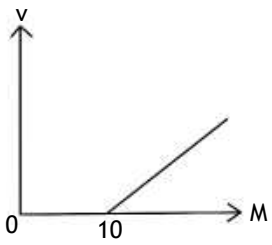
$$v - 10 = 10\,M$$

Antara graf-graf berikut, yang manakah menunjukkan hubungan antara v dengan M bagi persamaan di atas?
Which of the following graphs shows the relationship between v *and* M *for the above equation?*

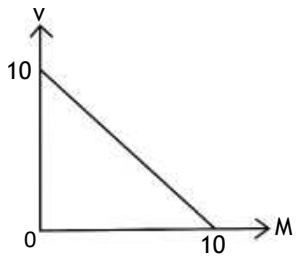
A



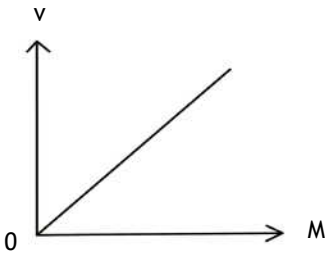
B



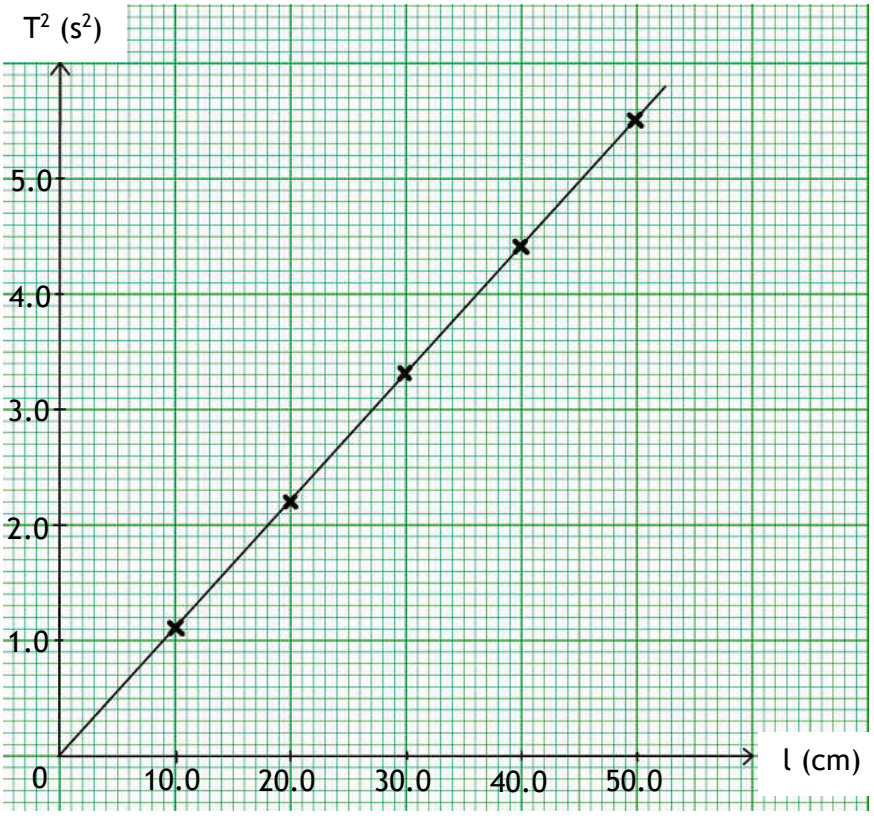
C



D



6 Seorang pelajar menjalankan satu eksperimen untuk mengkaji hubungan antara panjang bandul, l dan tempoh ayunan bandul, T.
Pelajar memplot graf T^2 melawan l seperti di Rajah 6.
A student carried out an experiment to investigate relationship between length of a simple pendulum, l *and the period of oscillation of the simple pendulum,* T.
The student plots the graph of T^2 *against* l *as in Diagram* 6.



Berdasarkan graf,
Based on the graph,

(a) Nyatakan satu kuantiti asas.
State one base quantity.

.....

[1 markah / 1 *mark*]

(b) Nyatakan hubungan antara T^2 dan l.
State the relationship between T^2 *and* l

.....

[1 markah / 1 *mark*]

(c) Nyatakan pemboleh ubah di dalam eksperimen.
State the variables in the experiment.

(i) Dimanipulsi : .....
Manipulated

(ii) Bergerak balas : .....
Responding

[2 markah / 2 *marks*]

PENILAIAN PRESTASI
PERFORMANCE EVALUATION

1 Kuantiti fizik manakah adalah bukan kuantiti asas?
Which of the following physical quantities is not a base quantity?

A Jisim
Mass

B Berat
Weight

C Kuantiti jirim
Quantity of matter

D Keamatan cahaya
Luminous intensity

2 Unit manakah yang merupakan satu unit terbitan?
Which unit is a derived unit?

A Voltan, V
Voltage, V

B Ampere, A
Ampere, A

C Meter, m
Metre, m

D Kilogram, kg
Kilogram, kg

3 Pasangan kuantiti manakah adalah benar?
Which pair quantity is correct?

	Kuantiti scalar ***Scalar quantity***	**Kuantiti vektor** ***Vector quantity***
A	Mempunyai magnitude Sahaja *Has magnitude only*	Mempunyai magnitude Sahaja *Has magnitude only*
B	Mempunyai arah Sahaja *Has direction only*	Mempunyai magnitude Sahaja *Has magnitude only*
C	Mempunyai magnitude Sahaja *Has magnitude only*	Mempunyai magnitude dan arah *Has magnitude and direction*
D	Mempunyai magnitude dan arah *Has magnitude and direction*	Mempunyai arah sahaja *Has direction only*

4 Antara berikut, pasangan manakah yang betul?
Which of the following pair is correct?

	Kuantiti Terbitan ***Derived Quantities***	**Unit**
A	Momentum	kg m^{-3}
B	Tekanan *Pressure*	N m^{-3}
C	Kerja *Work*	N m s^{-1}
D	Daya *Force*	kg m s^{-2}

SKEMA JAWAPAN
BAB 1 – PENGUKURAN

1.1 : KUANTITI FIZIK

Nombor soalan	Jawapan
1	C
2	D
3	B
4	C
5	D

Soalan		Peraturan Pemarkahan	Markah
6	(a)	Panjang / *Length*	1
	(b)	0.1 cm	1
	(c)	0.7 / 2 = 0.35 cm	1
	(d)	Kedudukan mata berserenjang dengan skala pembaris. *Position of the eye must be perpendicular to reading scale of the ruler.*	1

1.2 : PENYIASATAN SAINTIFIK

Nombor soalan	Jawapan
1	D
2	C
3	B
4	A
5	B

Soalan		Peraturan Pemarkahan	Markah
6	(a)	masa / Panjang *Time / length*	1
	(b)	T^2 berkadar terus dengan l T^2 *directly proportional with l*	1
	(c)	(i) Panjang bandul *Length of a simple pendulum* (ii) Tempoh ayunan bandul *Period of oscillation of simple pendulum.*	1 1

Suka sampel ini?

Nota SPM Sains & Matematik

Fizik (BM + English)

- Nota Tingkatan 4 dan 5 untuk subjek yang dipilih
- Fizik: modul PhysiXplosion T4 + Magnatron T5 dengan skema jawapan
- Set DLP: nota infografik Biology, Chemistry, Physics, Maths, Add Maths + 150 soalan ramalan DLP

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