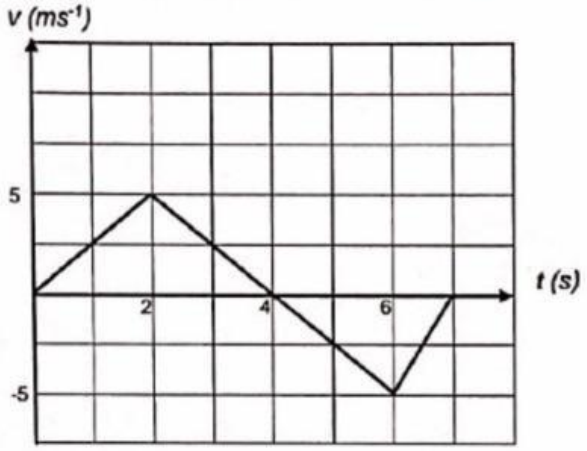
1 Apakah pemboleh ubah yang biasanya diplot pada paksi-x dalam graf?
Which variable is usually plotted on the x-axis in a graph?

A Pemboleh ubah dimalarkan
Constant variable

B Pemboleh ubah bergerak balas
Responding variable

C Pemboleh ubah dimanipulasikan
Manipulated variable

2 Rajah 1 menunjukkan graf halaju-masa bagi suatu objek yang bergerak di sepanjang garis lurus.
Diagram 1 shows the velocity-time graph of a moving object along a straight line.



Rajah 1
Diagram 1

Berapakah sesaran objek itu dalam 6 saat pertama?
What is the displacement of the object during first 6 seconds?

A 5 m
B 10 m
C 15 m
D 20 m

3 Momentum sesuatu objek akan menjadi sifar apabila
The momentum of an object will become zero when

A daya sifar
the force is zero

B berat sifar
the weight is zero

C halaju sifar
the velocity is zero

D pecutan sifar
the acceleration is zero

LIVEWORKSHEETS

4 Antara yang berikut, yang manakah **bukan** kesan daya?
*Which of the following is **not** the effect of force?*

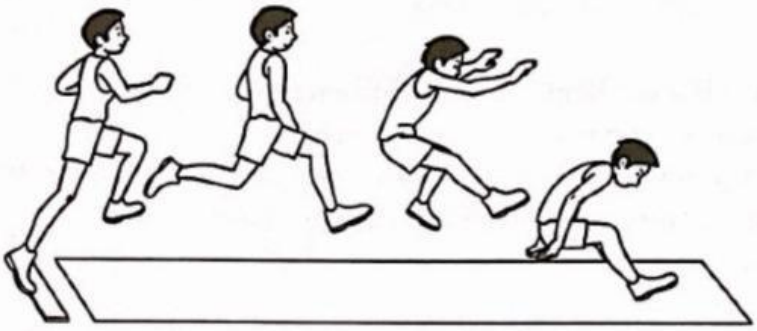
A Mengubah jisim objek.
Changing the mass of an object.

B Mengubah halaju objek.
Changing the velocity of an object.

C Mengubah bentuk objek.
Changing the shape of an object.

D Mengubah arah gerakan objek.
Changing the direction of motion of an object.

5 Rajah 2 di bawah menunjukkan seorang budak lelaki menggunakan teknik lompat jauh yang betul agar tidak mengalami kecederaan pada kakinya.
Diagram 2 shows a boy using the correct long jump technique to avoid injury to his legs.



Rajah 2
Diagram 2

Apakah sebab bagi situasi di atas?
What is the reason for the above situation?

A Meningkatkan daya.
Increase the force.

B Meningkatkan impuls.
Increase the impuls.

C Mengurangkan momentum.
Reduce the momentum.

D Mengurangkan daya impuls.
Reduce the impulsive force.

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LIVEWORKSHEETS

6 Hukum Kegravitian Semesta Newton menyatakan bahawa
Newton's Universal Law of Gravitation states that

A Daya graviti antara dua jasad adalah berkadar terus dengan hasil darab jisim kedua-dua jasad dan berkadar songsang dengan kuasa dua jarak di antara pusat dua jasad tersebut.
The gravitational force between two bodies is directly proportional to the product of the masses of both bodies and inversely proportional to the square of the distance between the centers of the two bodies.

B Garis yang menyambungkan planet dengan Matahari akan mencakupi luas yang sama dalam selang masa yang sama apabila planet bergerak dalam orbitnya.
A line that connects a planet to the Sun sweeps out equal areas in equal times.

C Orbit bagi setiap planet adalah elips dengan Matahari berada di satu daripada fokusnya.
All planets move in elliptical orbits with the Sun at one focus.

D Kuasa dua tempoh orbit planet adalah berkadar terus dengan kuasa tiga jejari orbitnya.
The square of the orbital period of any planet is directly proportional to the cube of the radius of its orbit.

7 Mengikut Hukum Kepler Ketiga, hubungan antara tempoh orbit, T dan jejari orbit, r bagi suatu planet boleh dinyatakan sebagai
According to Kepler's Third Law, the relationship between the orbital period, T *and the radius of orbit,* r *of a planet can be stated as*

A $T \alpha r$
B $T^2 \alpha r$
C $T^2 \alpha r^3$
D $T^3 \alpha r^2$

8 Satelit geopegun bermakna satelit tersebut adalah
The geostationary satellite means the satellite

A tidak bergerak.
does not move.

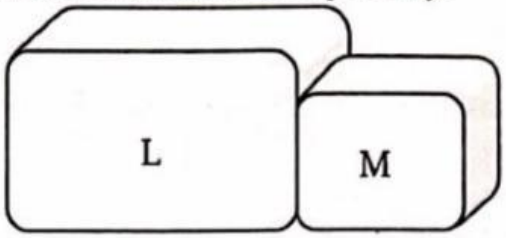
B sentiasa di atas lokasi geografi yang sama.
always above the same geographical location.

C jejari orbitnya sama dengan jejari bumi.
the radius of orbit same as the radius of Earth.

D bergerak pada arah yang bertentangan dengan arah putaran bumi.
moves in the direction opposite to the Earth's rotation.

LIVEWORKSHEETS

9 Rajah 3 menunjukkan dua blok kuprum, L dan M, yang bersentuhan secara terma. Suhu awal bagi L dan M masing-masing ialah 50°C dan 30°C.
Diagram 3 shows two copper blocks, L and M, are in thermal contact. The initial temperatures of L and M are 50°C and 30°C respectively.



Rajah 3
Diagram 3

Pernyataan yang manakah **betul** semasa blok L dan M berada dalam keadaan keseimbangan terma?
*Which statement is **correct** when blocks L and M are at thermal equilibrium?*

A Suhu L lebih tinggi daripada M.
Temperature of L is higher than M.

B Kuantiti haba dalam L sama dengan M.
The quantity of heat in L is the same as in M.

C Kadar perubahan suhu L lebih besar daripada M.
Rate of change in temperature of L is bigger than that of M.

D Pemindahan bersih haba antara L dan M adalah sifar.
Net heat transfer between L and M is zero.

10 Mengapakah seseorang berasa sejuk selepas berenang di laut jika badan tidak segera dilap?
Why does a person feel cold after swimming in the sea if the body is not dried immediately?

A Air menurunkan suhu badan.
Water lowers the body temperature.

B Air tersejat dan menyebabkan penyejukan.
Water evaporates and causes cooling.

C Air adalah konduktor haba yang baik.
Water is good conductor of heat.

D Air lebih sejuk daripada udara.
Water is colder than the air.

LIVEWORKSHEETS

11 Apakah yang berlaku kepada isipadu gas apabila suhunya meningkat pada tekanan malar?
What happens to the volume of a gas when its temperature increases at constant pressure?

A Isipadu berkurang.
Volume decreases.

B Isipadu bertambah.
Volume increases.

C Isipadu kekal.
Volume remains constant.

D Isipadu berubah secara rawak.
Volume changes randomly.

12 Tekanan udara dalam tayar kereta ialah 200 kPa pada suhu 25 °C.
Berapakah tekanan udara dalam tayar tersebut pada suhu 37°C?
[Anggap isipadu udara dalam tayar adalah tetap]
The air pressure in a car tyre is 200 kPa *at a temperature of* 25°C.
What is the air pressure in the tyre at a temperature of 37°C?
[Assume the volume of the air in the tyre is constant]

A 135 kPa

B 190 kPa

C 192 kPa

D 208 kPa

13 Suatu sistem ayunan mengalami pelembapan disebabkan oleh kewujudan
An oscillating system experiences damping due to the existence of

A gerakan linear.
linear motion.

B gerakan membulat.
circular motion.

C daya geseran.
frictional force.

D daya impuls.
impulsive force.

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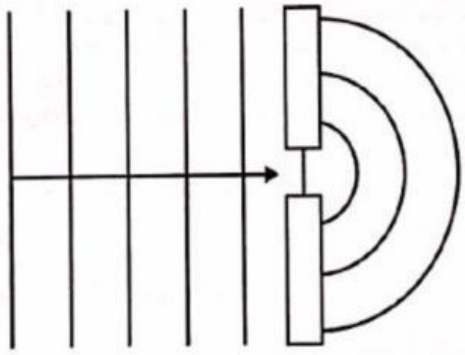
LIVEWORKSHEETS

14 Apakah perubahan yang berlaku terhadap laju gelombang, panjang gelombang dan frekuensi apabila gelombang air merambat dari kawasan air dalam ke kawasan air cetek?
What changes occur in the wave speed, wavelength and frequency when water waves propagate from deep water region to shallow water region?

	Laju gelombang *Wave speed*	**Panjang gelombang** *Wavelength*	**Frekuensi** *Frequency*
A	Bertambah *Increases*	Berkurang *Decreases*	Tidak berubah *No change*
B	Berkurang *Decreases*	Bertambah *Increases*	Berkurang *Decreases*
C	Bertambah *Increases*	Bertambah *Increases*	Bertambah *Increases*
D	Berkurang *Decreases*	Berkurang *Decreases*	Tidak berubah *No change*

15 Rajah 4 menunjukkan gelombang air merambat melalui suatu celah yang kecil.
Diagram 4 shows water wave propagating through a small slit.



Rajah 4
Diagram 4

Ciri gelombang terbelau manakah yang betul?
Which characteristics of the diffracted wave is correct?

A Panjang gelombang berkurang.
The wavelength decreases.

B Amplitud berkurang.
The amplitude decreases.

C Frekuensi bertambah.
The frequency increases.

D Kelajuan berkurang.
The speed decreases.

LIVEWORKSHEETS

16 Sinar ultraungu boleh digunakan untuk
Ultraviolet ray can be used to

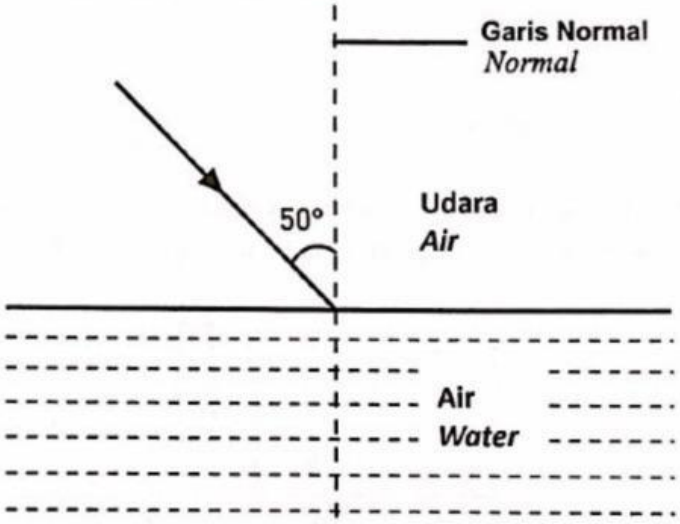
A memeriksa bagasi di lapangan terbang.
check baggage at the airport.

B menentukan kedalaman lautan.
determine the depth of ocean.

C mengesan wang kertas palsu.
detect counterfeit notes.

D membunuh sel-sel kanser.
kill cancer cells.

17 Rajah 5 menunjukkan satu sinar cahaya merambat dari udara ke dalam air.
Diagram 5 shows a light ray propagating from air into water.



Rajah 5
Diagram 5

Apakah yang berlaku kepada sinar cahaya di dalam air?
What happens to the light ray in the water?

A Dibiaskan ke arah garis normal.
Refracts towards normal.

B Dibiaskan menjauhi garis normal.
Refracts away from normal.

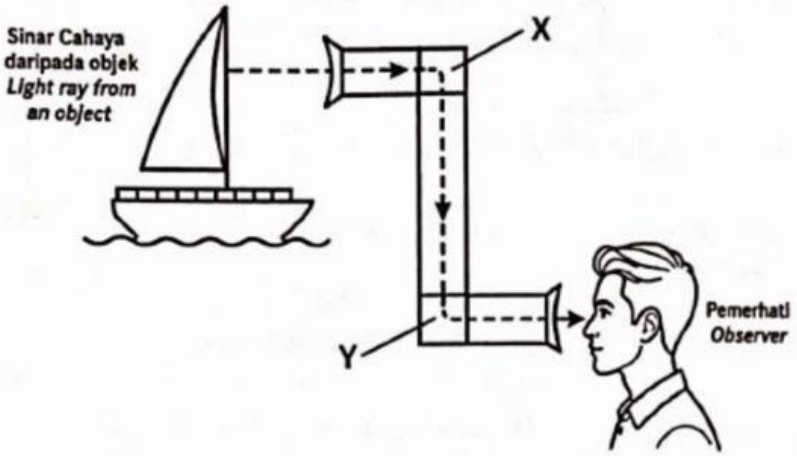
C Mengalami pantulan dalam penuh.
Experiences total internal reflection.

D Dipantulkan dengan sudut yang sama dengan sudut tuju.
Reflects with the same angle as the angle of incidence.

LIVEWORKSHEETS

18 Rajah 6 menunjukkan satu periskop dengan dua prisma diletakkan dalam ruang X dan Y.

Diagram 6 shows a periscope with two prisms placed in space X and Y.

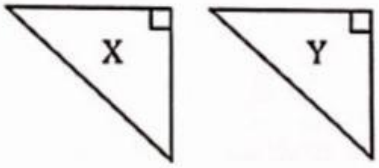


Rajah 6
Diagram 6

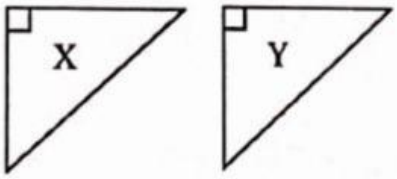
Susunan manakah yang betul bagi prisma X dan Y supaya pemerhati itu dapat melihat imej objek itu?

Which arrangement of prisms X and Y is correct so that the observer can see the image of the object?

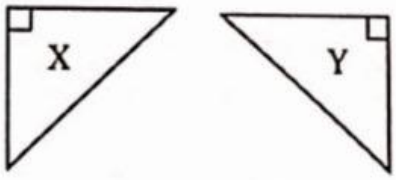
A



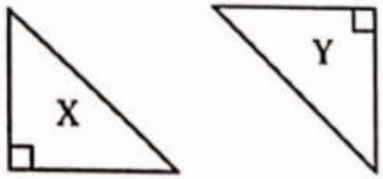
B



C



D



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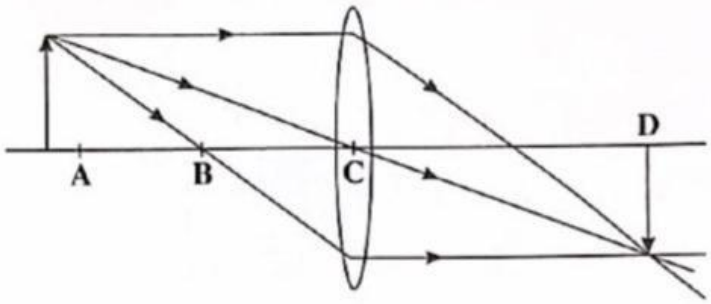
LIVEWORKSHEETS

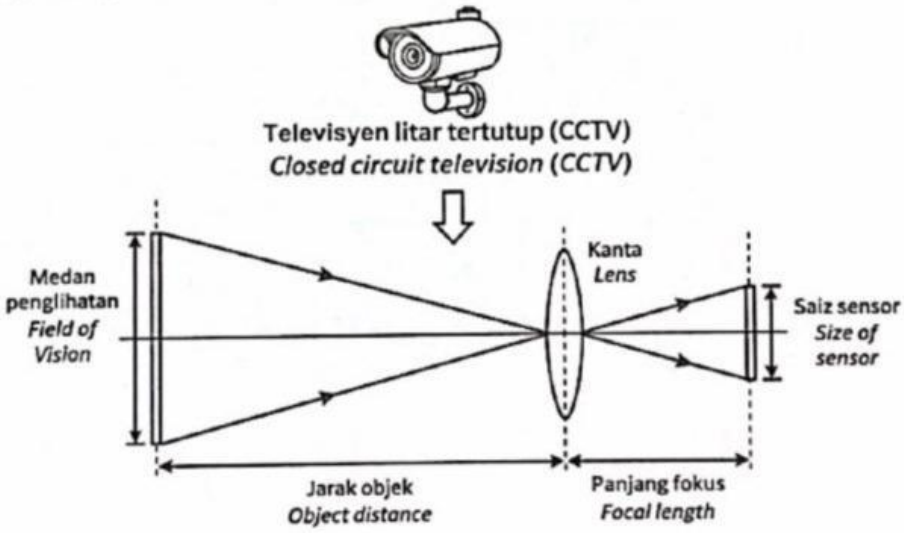
19 Rajah 7 menunjukkan sinar cahaya bergerak melalui suatu kanta cembung.
Diagram 7 shows light rays passing through a convex lens.



Rajah 7
Diagram 7

Antara titik, **A**, **B**, **C** dan **D**, yang manakah adalah titik fokus?
Which point, **A**, **B**, **C** *or* **D**, *is the focal point?*

20 Rajah 8 menunjukkan pembentukan imej oleh kanta bersaiz kecil dalam televisyen litar tertutup (CCTV).
Diagram 8 shows the formation of an image by a small-sized lens in a closed-circuit television (CCTV).



Rajah 8
Diagram 8

LIVEWORKSHEETS

Antara pernyataan-pernyataan berikut, yang manakah benar?
Which of the following statement is correct?

A Ketebalan keseluruhan bekas CCTV tidak terhad kepada panjang fokus kanta CCTV tersebut.
The overall thickness of the CCTV casing is not limited to the focal length of the CCTV lens.

B Jarak maksimum di antara sensor dengan pusat kanta haruslah sama dengan panjang fokus.
The maximum distance between the sensor and the center of the lens has to be the same as the focal length.

C Imej yang terhasil adalah nyata, songsang dan diperkecilkan pada sensor.
The form of an image is real, inverted and diminished on the sensor.

D Panjang fokus kanta CCTV boleh bernilai sifar.
The focal length of the CCTV lens can be zero.

21 Apakah itu daya paduan?
What is resultant force?

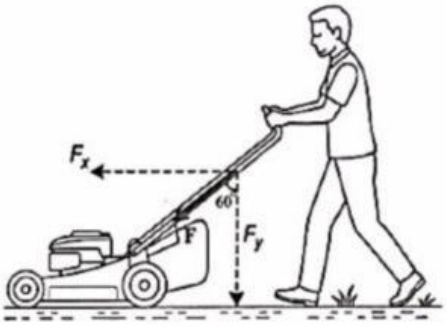
A Daya tunggal yang mewakili jumlah secara vektor dua atau lebih daya yang bertindak ke atas sesuatu objek.
The single force that represents the vector sum of two or more forces acting on an object.

B Daya-daya yang bertentangan dengan magnitud yang berbeza.
Opposing forces of different magnitudes.

C Daya-daya yang bertentangan dengan magnitud yang sama.
Opposing forces of equal magnitudes.

D Daya tunggal yang bertindak ke atas sesuatu objek.
A single force acting on an object.

22 Rajah 9 menunjukkan seorang pekebun menolak mesin rumput dengan daya F pada sudut 60° dari garis menegak, F_y.
Diagram 9 shows a gardener pushing a lawnmower with a force F *at an angle of* 60° *from the vertical line,* F_y.



Rajah 9
Diagram 9

LIVEWORKSHEETS

Apakah kesan komponen menegak daya, F_y, ke atas mesin rumput tersebut?
What is the effect of the vertical component of force, F_y, *on the lawnmower?*

A Mengurangkan berat mesin rumput tersebut.
Reduce the weight of the lawnmower.

B Menyebabkan mesin rumput memecut ke hadapan.
Cause the lawnmower to accelerate forward.

C Menambah daya geseran antara roda dan tanah.
Increase the frictional force between the wheels and the ground.

D Mengurangkan tekanan mesin rumput ke atas permukaan tanah.
Reduce the pressure of the lawnmower on the ground surface.

23 Antara fenomena berikut, yang manakah menunjukkan keseimbangan daya?
Which of the following phenomenon shows forces in equilibrium?

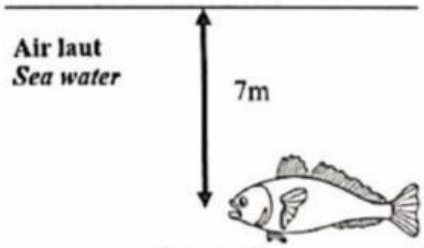
A Sebiji kelapa jatuh dari pokok.
A coconut falling from a tree.

B Sebuah roket memecut ke atas.
A rocket accelerates upwards.

C Lif yang mula bergerak ke bawah.
An elevator starting to move downwards.

D Sebuah bingkai gambar digantung pada dinding.
A picture is hanging on the wall.

24 Rajah 10 menunjukkan seekor ikan di dalam laut.
Diagram 10 *shows a fish in the sea.*



Rajah 10
Diagram 10

Apakah tekanan yang dikenakan oleh air ke atas ikan itu?
What is the pressure exerted by the water on the fish?
[Ketumpatan air = 1000 kg m^{-3}]
[*Density of water* = 1000 kg m^{-3}]

A 6.87×10^4 Pa
B 6.87×10^5 Pa
C 6.87×10^6 Pa
D 6.87×10^7 Pa

LIVEWORKSHEETS

25 Rajah 11 menunjukkan seorang pendaki gunung mendapati bahawa beg plastik makanannya telah menjadi kembung apabila sampai di puncak gunung.
Diagram 11 *shows a mountain climber found that his food plastic bag has become bloated when he arrived at the mountain peak.*

Rajah 11
Diagram 11

Mengapakah beg plastik tersebut menjadi kembung?
Why does the plastic bag become bloated?

A Suhu di puncak gunung sangat rendah.
The temperature at the mountain peak is very low.

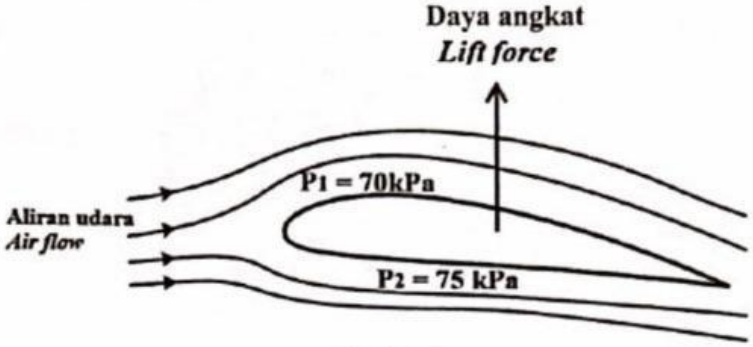
B Ketumpatan udara di dalam beg plastik bertambah.
The density of air in the plastic bag increased.

C Tekanan udara di dalam beg plastik adalah sama dengan tekanan atmosfera.
The air pressure in the plastic bag is equal to the atmospheric pressure.

D Tekanan atmosfera di puncak gunung lebih rendah daripada tekanan udara di dalam beg plastik.
The atmospheric pressure at the peak is lower than the air pressure in the plastic bag.

LIVEWORKSHEETS

26 Rajah 12 menunjukkan keratan rentas sayap kapal terbang berbentuk aerofoil. Luas permukaan sayap kapal terbang itu ialah 30 m^2.
Diagram 12 *shows a cross-section of an aeroplane wing with aerofoil shape. The surface area of the wing is* 30 m^2.

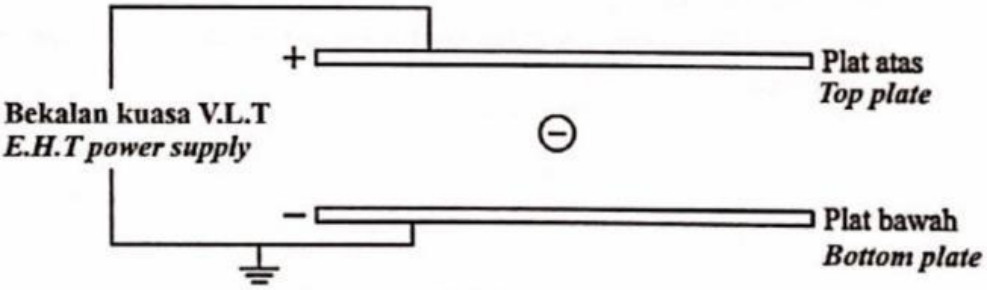


Rajah 12
Diagram 12

Apakah daya angkat yang bertindak ke atas sayap apabila kapal terbang bergerak?
What is the lift force acting on the wing when the aeroplane moves?

A 150 000 N
B 210 000 N
C 225000 N
D 4350 000 N

27 Rajah 13 menunjukkan satu zarah bercas negatif dalam keadaan pegun di antara dua plat logam selari yang disambungkan ke bekalan kuasa Voltan Lampau Tinggi (V.L.T).
Diagram 13 *shows a negatively charged particle is stationary between two parallel metal plates connected to an Extra High Tension (E.H.T) power supply.*



Rajah 13
Diagram 13

Apakah yang akan berlaku kepada zarah tersebut jika voltan bekalan kuasa V.L.T ditingkatkan?
What will happen to the particle if the voltage of the E.H.T power supply is increased?

LIVEWORKSHEETS

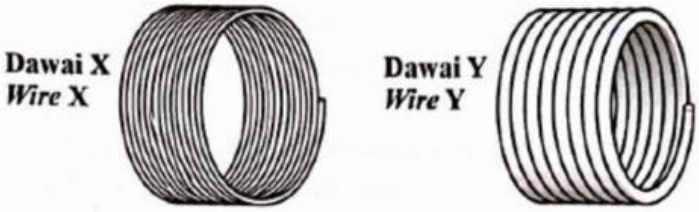
A Zarah kekal pegun.
The particle remains stationary.

B Zarah memecut ke kiri.
The particle accelerates to the left.

C Zarah terpesong ke arah plat atas.
The particle deflected towards the top plate.

D Zarah terpesong ke arah plat bawah.
The particle deflected towards the bottom plate.

28 Rajah 14 menunjukkan dua jenis dawai nikrom, X dan Y, yang mempunyai panjang yang sama tetapi luas keratan rentas yang berbeza.
Diagram 14 *shows two types of nichrome wires, X and Y, which have the same length but different cross-sectional area.*



Rajah 14
Diagram 14

Antara berikut, pernyataan yang manakah adalah **betul** tentang rintangan dawai X dan Y?
Which of the following statements is a ***correct*** *about the resistance of wires* X *and* Y*?*

A Rintangan X < Rintangan Y
Resistance of X < *Resistance of* Y

B Rintangan X > Rintangan Y
Resistance of X > *Resistance of* Y

C Rintangan X = Rintangan Y
Resistance of X = *Resistance of* Y

D Rintangan tidak bergantung kepada luas keratan rentas.
Resistance does not depend on the cross-sectional area.

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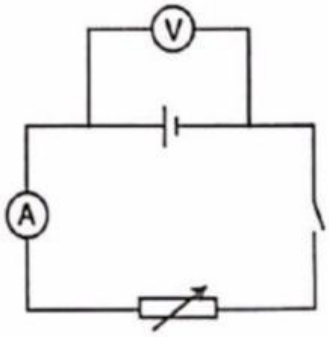
LIVEWORKSHEETS

29. Rajah 15 menunjukkan satu litar terbuka. Daya gerak elektrik, d.g.e. bateri ialah Ɛ dan rintangan dalamnya ialah r.
Diagram 15 *shows an open circuit. The electromotive force, e.m.f of the battery is* Ɛ *and the internal resistance is* r.



Rajah 15
Diagram 15

Apakah yang berlaku kepada bacaan voltmeter apabila suis ditutup?
What happens to the reading of the voltmeter when the switch is closed?

A Sama dengan sifar
Equal to zero

B Sama dengan Ɛ
Same as Ɛ

C Lebih daripada Ɛ
More than Ɛ

D Kurang daripada Ɛ
Less than Ɛ

LIVEWORKSHEETS