

Bab 9

Laju dan Pecutan Speed and Acceleration

Bahagian A

- 1 Jadual berikut menunjukkan pemanduan seorang pemandu kereta.
The following table shows the driving of a car driver.

Jarak Distance	330 km
Masa Time	180 minit 180 minutes

Hitungkan laju, dalam km/j, kereta itu.
Calculate the speed, in km/h, of the car.

- A 80
- B 90
- C 110
- D 120

- 2 Antara berikut, yang manakah menunjukkan laju seragam?
Which of the following shows uniform speed?

- A Pergerakan angin
The movement of wind
- B Pergerakan jarum jam
The movement of hour hand
- C Pergerakan seekor arnab
The movement of a rabbit
- D Pergerakan sebuah kereta
The movement of a car

- 3 Suatu zarah mula bergerak dengan laju 0.25 m/s selama 6 saat dan kemudian dengan laju 0.10 m/s selama 4 saat lagi. Cari jumlah jarak zarah itu telah bergerak.

A particle started to move at a speed of 0.25 m/s for 6 seconds and then at a speed of 0.10 m/s for another 4 saat. Find the total distance the particle has travelled.

- A 3.5 m
- B 1.9 m
- C 1.5 m
- D 0.035 m

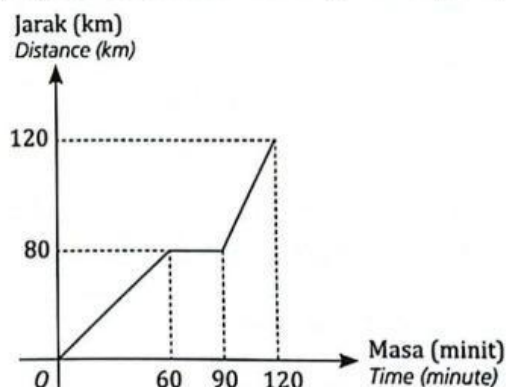
- 4 Armin telah memandu 60 km dengan laju 90 km/j dan 80 km dalam 48 minit. Cari laju purata, dalam km/j, pemanduan Armin.

Armin drove 60 km at a speed of 90 km/h and 80 km in 48 minutes. Find the average speed, in km/h, of Armin's driving.

- A 95.5
- B 60.9
- C 15.9
- D 13.6

- 5 Graf jarak-masa berikut menunjukkan perjalanan Azman dan keluarganya di sebuah lebuh raya.

The following distance-time graph shows the journey of Azman and his family on a highway.



Hitung laju purata, dalam km/j, perjalanan Azman di lebuh raya itu.

Calculate the average speed, in km/h, of Azman's journey on the highway.

- A 120
- B 100
- C 95
- D 80

- 6 Suatu zarah alfa bergerak 3.75×10^8 m dalam 25 saat. Cari laju, dalam km/s, zarah itu.

An alpha particle moves 3.75×10^8 m in 25 seconds. Find the speed, in km/s, of the particle.

- A 1.5×10^7
- B 1.5×10^5
- C 1.5×10^4
- D 1.5×10^2

- 7 Jadual berikut menunjukkan laju sebuah kereta pada suatu jangka masa tertentu.
The following table shows the speed of a car in a certain period of time.

Masa (jam) Time (hour)	Laju (km/j) Speed (km/h)
0 – 1.5	120
1.5 – 2.25	100

Hitungkan laju purata, dalam km/min, kereta itu.

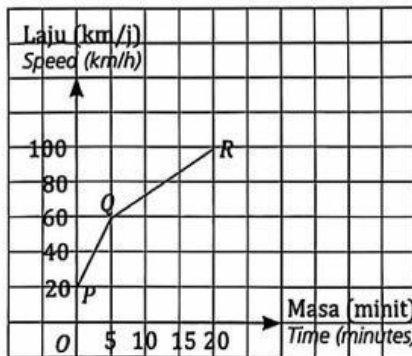
Calculate the average speed, in km/min, of the car.

- A 113.3 C 1.9
B 100 D 1.7

- 8 Sebiji bola yang sedang bergerak dengan kelajuan 20 m/min telah berhenti selepas 5 minit. Cari pecutan, dalam m/min², bola itu.
A ball which was moving at a speed of 20 m/min has stopped after 5 minutes. Find the acceleration, in m/min², of the ball.

- A -100 C 4
B -4 D 100

- 9 Graf laju-masa berikut menunjukkan perubahan laju bagi sebuah kereta.
The following speed-time graph shows the speed change of a car.



Antara berikut, yang manakah menunjukkan pecutan yang betul?

Which of the following shows the correct acceleration?

	P – Q	Q – R
A	-480 km/j ² -480 km/h ²	-160 km/j ² -160 km/h ²
B	-8 km/j ² -8 km/h ²	-2.67 km/j ² -2.67 km/h ²
C	8 km/j ² 8 km/h ²	2.67 km/j ² 2.67 km/h ²
D	480 km/j ² 480 km/h ²	160 km/j ² 160 km/h ²

- 10 Azizah memandu dengan kelajuan seragam 80 km/j tetapi dia mengurangkan lajunya dengan kadar 600 km/j² selama 4 minit apabila jalan raya mula sesak. Cari laju, dalam km/j, pemanduan Azizah selepas 4 minit.
Azizah was driving at a uniform speed of 80 km/h but she slowed down her speed at a rate of 600 km/h² for 4 minutes when the road starts to jam. Find the speed, in km/h, of Azizah's driving after 4 minutes.

- A 40
B 60
C 100
D 120

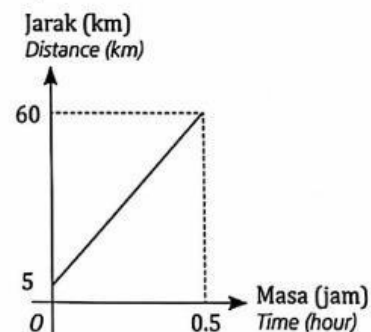
- 11 Laju suatu zarah berkurang kepada 1×10^4 m/s dengan kadar 400 m/s per saat. Jika zarah itu mengambil masa 5 saat untuk mengurangkan lajunya, cari laju awalya.

The speed of a particle decreases to 1×10^4 m/s at a rate of 400 m/s per second. If the particle took 5 seconds to decrease its speed, find its initial speed.

- A 7.2×10^5 m/s
B 7.2×10^2 km/s
C 4.32×10^4 km/min
D 720 km/min

- 12 Graf jarak-masa berikut menunjukkan laju sebuah motosikal.

The following distance-time graph shows the speed of a motorcycle.



Jika motosikal berhenti dalam masa 10 minit, cari nyahpecutan motosikal itu.

If the motorcycle stops in 10 minutes, find the deceleration of the motorcycle.

- A 11 km/j per jam
11 km/h per hour
B 11 km/j per minit
11 km/h per minute
C 11 km/j per saat
11 km/h per second
D -11 km/j per minit
-11 km/h per minute

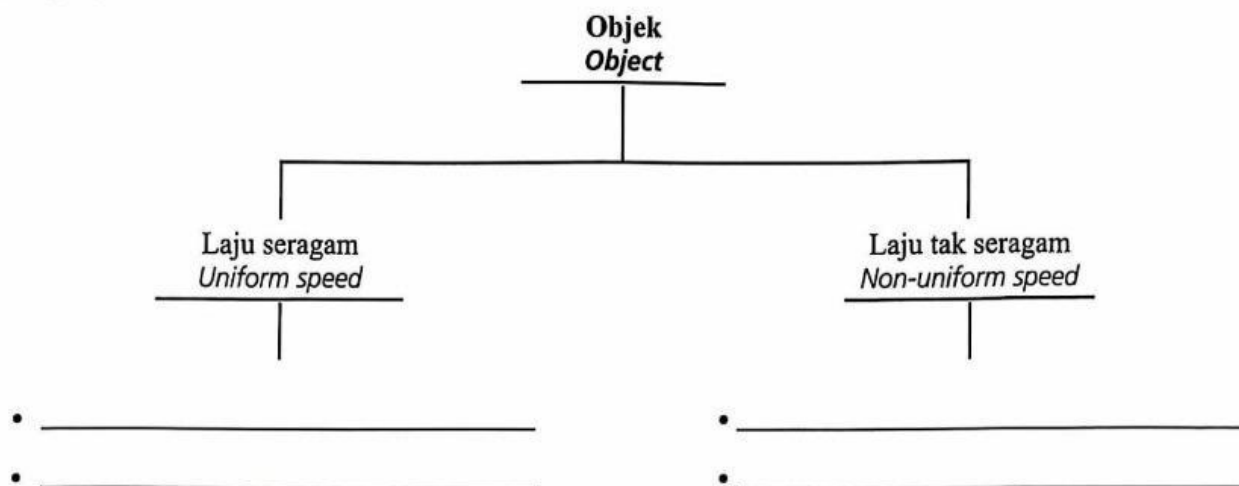
Bahagian B

- 1 Kategorikan objek berikut berdasarkan jenis lajunya.
Categorise the following objects based on their types of speed.

Basikal Bicycle	Eskalator Escalator	Kapal terbang Aeroplane	Musytari Jupiter
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[4 markah/ marks]

Jawapan/ Answer:



- 2 Bulatkan pecutan yang betul berdasarkan pernyataan berikut.
Circle the correct acceleration based on the following statements.

[4 markah/ marks]

Jawapan/ Answer:

	Pernyataan Statement	Pecutan Acceleration	
(a)	Laju sebuah kereta berkurang daripada 30 m/s kepada 20 m/s dalam masa 5 saat. The speed of a car decreases from 30 m/s to 20 m/s in 5 seconds.	2 m s^{-2}	-2 m s^{-2}
(b)	Sebuah motosikal memecut daripada 36 km/j kepada 72 km/j dalam masa 20 saat. A motorcycle accelerates from 36 km/h to 72 km/h in 20 seconds.	1.8 km/min^2	1.8 km/s^2
(c)	Seorang pemandu teksi mengurangkan lajunya daripada 60 km/j hingga berhenti dalam masa 4 minit. A taxi driver reduces his speed from 60 km/h to a stand still in 4 minutes.	-900 km j^{-2} -900 km h^{-2}	-900 km min^{-2} -900 km h^{-2}
(d)	Sebuah bola yang pegun boleh mencapai 90 km/j dalam masa 5 saat selepas ditendang. A stationary ball can reach 90 km/h in 5 seconds after being kicked.	$-1.8 \times 10^4 \text{ m/min}^2$	$1.8 \times 10^4 \text{ m/min}^2$

- 3 Lengkapkan jadual berikut yang berkaitan dengan jarak, masa dan laju.
Complete the following table which related to distance, time and speed.

[4 markah/ marks]

Jawapan/ Answer:

Jarak <i>Distance</i>	Masa <i>Time</i>	Laju <i>Speed</i>
(a)	2.4 saat <i>2.4 seconds</i>	75 m/s
6 450 m	1.5 jam <i>1.5 hours</i>	(b) km/j <i>km/h</i>
336 km	(c)	80 km/j <i>80 km/h</i>
1 800 m	(d)	30 km/s