

Penyelesaian Lengkap

PRAKTIS 9

Bahagian A

$$1 \text{ Laju/Speed} = \frac{200 \text{ m}}{20.63 \text{ s}} \\ = 9.69 \text{ m s}^{-1}$$

Ahmad menang kerana masa yang diambilnya lebih pendek.

Ahmad wins because his time taken is shorter.

Jawapan/Answer: C

$$2 \text{ Graf garis lurus mewakili laju seragam.} \\ \text{A straight line graph represents uniform speed.} \\ \text{Jawapan/Answer: A}$$

$$3 \text{ Jarum jam bergerak suatu jarak yang sama bagi selang} \\ \text{masa yang sama.} \\ \text{The hand of clock moves an equal distance over equal} \\ \text{time interval.} \\ \text{Jawapan/Answer: D}$$

$$4 \text{ Laju} = \frac{174 \text{ km}}{2.5 \text{ j}} \\ = 69.6 \text{ km j}^{-1} \\ \text{Speed} = \frac{174 \text{ km}}{2.5 \text{ h}} \\ = 69.6 \text{ km h}^{-1}$$

Jawapan/Answer: B

$$5 \text{ } 175 \text{ m/s} = \frac{175 \text{ m}}{1 \text{ s}} \\ = \frac{175 \div 1 \text{ 000 km}}{1 \div 60 \text{ min}} \\ = 10.5 \text{ km/min}$$

Jawapan/Answer: C

$$6 \text{ Jarak/Distance} = 28 \times 3 \times 60 \text{ m} \\ = 5 \text{ 040 m} \\ = \frac{5 \text{ 040}}{1 \text{ 000}} \text{ km} \\ = 5.04 \text{ km}$$

Jawapan/Answer: B

$$7 \text{ Jarak} = \text{Laju} \times \text{Masa} \\ \text{Distance} = \text{Speed} \times \text{Time} \\ = 87 \times 2 \frac{1}{3} \text{ km} \\ = 87 \times \frac{7}{3} \text{ km} \\ = 203 \text{ km}$$

Jawapan/Answer: D

$$8 \text{ Masa} = \frac{187 \text{ km}}{68 \text{ km/j}} \qquad \text{Time} = \frac{187 \text{ km}}{68 \text{ km/h}} \\ = 2.75 \text{ j} \qquad \qquad \qquad = 2.75 \text{ h}$$

Jawapan/Answer: C

$$9 \text{ Masa} = \frac{300}{80} \text{ j} \\ = 3.75 \text{ j}$$

$$\text{Laju purata} = \frac{300}{4.25} \text{ km/j} \\ = 70.59 \text{ km/j}$$

$$\text{Time} = \frac{300}{80} \text{ h} \\ = 3.75 \text{ h}$$

$$\text{Average speed} = \frac{300}{4.25} \text{ km/h} \\ = 70.59 \text{ km/h}$$

Jawapan/Answer: A

$$10 \text{ Laju} = \frac{286 \text{ km}}{3.25 \text{ j}} \\ = 88 \text{ km/j}$$

$$\text{Speed} = \frac{286 \text{ km}}{3.25 \text{ h}} \\ = 88 \text{ km/h}$$

Jawapan/Answer: B

$$11 \text{ } 96 \text{ km/j} = \frac{96 \text{ km}}{1 \text{ j}} \\ 96 \text{ km/h} = \frac{96 \text{ km}}{1 \text{ h}} \\ = \frac{96 \text{ km}}{60 \times 60 \text{ s}} \\ = \frac{2}{75} \text{ km/s}$$

$$\text{Pecutan/Acceleration} = \frac{\frac{2}{75} - 0 \text{ km/s}}{8 \text{ s}} \\ = 0.00333 \text{ km/s}^2$$

Jawapan/Answer: A

$$12 \text{ Pecutan/Acceleration} = \frac{18 - 8}{5} \\ = 2 \text{ m/s}^2$$

Jawapan/Answer: D

$$13 \text{ Pecutan/Acceleration} = \frac{0 - 24}{20} \\ = \frac{-24}{20} \text{ m/s}^2 \\ = -1.2 \text{ m/s}^2$$

Jawapan/Answer: A

$$14 \text{ Pecutan} = \frac{0 - 80 \text{ km/j}}{8 \text{ s}} \\ = -10 \text{ km/j per saat} \\ \text{Acceleration} = \frac{0 - 80 \text{ km/h}}{8 \text{ s}} \\ = -10 \text{ km/h per second} \\ \text{Nyahpecutan} = 10 \text{ km/j per saat} \\ \text{Deceleration} = 10 \text{ km/h per second}$$

Jawapan/Answer: C

$$15 \text{ Pecutan} = \frac{105 - 65 \text{ km/j}}{15 \text{ min}}$$

$$= \frac{40 \text{ km/j}}{\frac{1}{4} \text{ j}}$$

$$= 160 \text{ km/j}^2$$

$$\text{Acceleration} = \frac{105 - 65 \text{ km/h}}{15 \text{ min}}$$

$$= \frac{40 \text{ km/h}}{\frac{1}{4} \text{ h}}$$

$$= 160 \text{ km/h}^2$$

Jawapan/Answer: D

$$16 \text{ Pecutan/Acceleration} = \frac{36 - 68 \text{ m/min}}{5 \text{ min}}$$

$$= -\frac{32}{5} \text{ m/min}^2$$

$$= -6.4 \text{ m/min}^2$$

Nyahpecutan/Deceleration = 6.4 m/min²

Jawapan/Answer: B

$$17 \text{ Pecutan/Acceleration} = \frac{12 - 0}{\frac{2}{3} \times 60 \text{ s}}$$

$$= \frac{12 \text{ m/s}}{40 \text{ s}}$$

$$= 0.3 \text{ m/s}^2$$

Jawapan/Answer: A

Bahagian B

- 1 (a) ✗ (b) ✓ (c) ✓ (d) ✗

2 (a)	Sebiji bola keranjang dilontar ke dalam bakul. <i>A basketball is thrown into the basket.</i>	Laju seragam <i>Uniform speed</i> Laju tak seragam <i>Non-uniform speed</i>
(b)	Seorang penunggang basikal berbasikal menaiki suatu kecondongan. <i>A cyclist cycles up a slope.</i>	
(c)	Pergerakan jarum saat bagi sebuah jam randik. <i>Movement of the second hand of a stopwatch.</i>	
(d)	Pergerakan sebuah eskalator. <i>Movement of an escalator.</i>	

$$3 \text{ (a) (i) } 108 \text{ km/j} = \frac{108 \text{ km}}{1 \text{ j}}$$

$$108 \text{ km/h} = \frac{108 \text{ km}}{1 \text{ h}}$$

$$= \frac{108 \times 1000 \text{ m}}{60 \text{ min}}$$

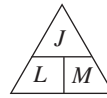
$$= 1800 \text{ m/min}$$

$$(ii) 90 \text{ cm/s} = \frac{90 \text{ cm}}{1 \text{ s}}$$

$$= \frac{90 \div 100 \text{ m}}{1 \div 60 \text{ min}}$$

$$= 54 \text{ m/min}$$

(b)



$J = \text{Jarak}$

$D = \text{Distance}$

$L = \text{Laju}$

$S = \text{Speed}$

$M = \text{Masa}$

$T = \text{Time}$

$J = L \times M$

$D = S \times T$

$$L = \frac{J}{M}$$

$$S = \frac{D}{T}$$

$$M = \frac{J}{L}$$

$$T = \frac{D}{S}$$

(i)	Jarak = Laju × Masa <i>Distance = Speed × Time</i>	✓
(ii)	Laju = $\frac{\text{Masa}}{\text{Jarak}}$ <i>Speed = $\frac{\text{Time}}{\text{Distance}}$</i>	
(iii)	Masa = $\frac{\text{Jarak}}{\text{Laju}}$ <i>Time = $\frac{\text{Distance}}{\text{Speed}}$</i>	✓

$$4 \text{ (a) } 680 \text{ m/min}^2 = \frac{680 \text{ m}}{1 \text{ min}^2}$$

$$= \frac{680 \div 1000 \text{ km}}{1 \text{ min}^2}$$

$$= 0.68 \text{ km/min}^2$$

$$96 \text{ km/j}^2 = \frac{96 \text{ km/j}}{1 \text{ j}}$$

$$= \frac{96 \text{ km/j}}{3600 \text{ s}}$$

$$= 0.0267 \text{ km/j per saat}$$

$$96 \text{ km/h}^2 = \frac{96 \text{ km/h}}{1 \text{ h}}$$

$$= \frac{96 \text{ km/h}}{3600 \text{ s}}$$

$$= 0.0267 \text{ km/h per second}$$

(b) (i) Nyahpecutan: Laju berkurangan
Deceleration: Speed decreases

(ii) Pecutan: Laju bertambah
Acceleration: Speed increases

Bahagian C

$$1 \text{ (a) (i) } \text{Jarak/Distance} = 18 \times 3 \times 60 \text{ m}$$

$$= 3240 \text{ m}$$

$$= 3240 \div 1000 \text{ km}$$

$$= 3.24 \text{ km}$$

$$\begin{aligned} \text{(ii) Masa/Time} &= \frac{720 \text{ m}}{18 \text{ m/s}} \\ &= 40 \text{ s} \end{aligned}$$

$$\begin{aligned} \text{(b) (i) Jarak} &= 86 \text{ km/j} \times 1 \frac{1}{2} \text{ j} \\ \text{Distance} &= 86 \text{ km/h} \times 1 \frac{1}{2} \text{ h} \\ &= 86 \times \frac{3}{2} \text{ km} \\ &= 129 \text{ km} \end{aligned}$$

$$\begin{aligned} \text{(ii) Jumlah jarak/Total distance} &= 129 + 129 \\ &= 258 \text{ km} \end{aligned}$$

$$\begin{aligned} \text{Jumlah masa yang diambil} &= 1.5 + 1.5 + 0.5 \\ &= 3.5 \text{ j} \\ \text{Total time taken} &= 1.5 + 1.5 + 0.5 \\ &= 3.5 \text{ h} \end{aligned}$$

$$\begin{aligned} \text{Laju purata} &= \frac{258 \text{ km}}{3.5 \text{ j}} \\ &= 73.71 \text{ km/j} \\ \text{Average speed} &= \frac{258 \text{ km}}{3.5 \text{ h}} \\ &= 73.71 \text{ km/h} \end{aligned}$$

$$\begin{aligned} \text{(c) Pecutan} &= \frac{(75 - 90) \text{ km/j}}{15 \text{ min}} \\ &= \frac{-15 \text{ km/j}}{\frac{15}{60} \text{ j}} \\ &= -15 \times \frac{60}{15} \text{ km/j}^2 \\ &= -60 \text{ km/j}^2 \end{aligned}$$

$$\begin{aligned} \text{Acceleration} &= \frac{(75 - 90) \text{ km/h}}{15 \text{ min}} \\ &= \frac{-15 \text{ km/h}}{\frac{15}{60} \text{ h}} \\ &= -15 \times \frac{60}{15} \text{ km/h}^2 \\ &= -60 \text{ km/h}^2 \end{aligned}$$

$$\begin{aligned} \text{Nyahpecutan} &= 60 \text{ km/j}^2 \\ \text{Deceleration} &= 60 \text{ km/h}^2 \end{aligned}$$

$$2 \text{ (a) (i) Pecutan/Acceleration} = 1.5 \text{ m/s}^2$$

$$\begin{aligned} \frac{0 - v}{8} &= -1.5 \\ -v &= -1.5 \times 8 \\ &= -12 \\ v &= 12 \end{aligned}$$

$$\begin{aligned} \text{(ii) Jarak/Distance} &= v \times 10 \\ &= 12 \times 10 \\ &= 120 \text{ m} \end{aligned}$$

$$\begin{aligned} \text{(b) Jarak yang dilalui dalam dua jam pertama} \\ \text{Distance travelled in the first two hours} &= 75 \times 2 \\ &= 150 \text{ km} \end{aligned}$$

$$\begin{aligned} \text{Baki jarak/Remaining distance} &= 348 - 150 \\ &= 198 \text{ km} \end{aligned}$$

$$\text{Masa yang diambil (Bahagian kedua)} = x \text{ jam}$$

$$\text{Time taken (Second part)} = x \text{ hours}$$

$$1130 - 0615 = 515$$

$$5 \text{ jam } 15 \text{ min} = 5.25 \text{ jam}$$

$$5 \text{ hours } 15 \text{ min} = 5.25 \text{ hours}$$

$$2 + 0.5 + x = 5.25$$

$$x = 5.25 - 2 - 0.5$$

$$= 2.75$$

$$\begin{aligned} \text{Laju purata} &= \frac{198 \text{ km}}{2.75 \text{ j}} \\ &= 72 \text{ km/j} \end{aligned}$$

$$\begin{aligned} \text{Average speed} &= \frac{198 \text{ km}}{2.75 \text{ h}} \\ &= 72 \text{ km/h} \end{aligned}$$

$$\text{(c) Kereta P/Car P:}$$

$$\begin{aligned} \text{Masa diambil} &= \frac{400 \text{ km}}{80 \text{ km/j}} \\ &= 5 \text{ j} \end{aligned}$$

$$\begin{aligned} \text{Time taken} &= \frac{400 \text{ km}}{80 \text{ km/h}} \\ &= 5 \text{ h} \end{aligned}$$

$$\text{Kereta Q/Car Q:}$$

$$\begin{aligned} \text{Laju} &= \frac{200 \text{ km}}{2 \text{ j}} \\ &= 100 \text{ km/j} \end{aligned}$$

$$\begin{aligned} \text{Speed} &= \frac{200 \text{ km}}{2 \text{ h}} \\ &= 100 \text{ km/h} \end{aligned}$$

$$\begin{aligned} \text{Masa diambil} &= \frac{400 \text{ km}}{100 \text{ km/j}} \\ &= 4 \text{ j} \end{aligned}$$

$$\begin{aligned} \text{Time taken} &= \frac{400 \text{ km}}{100 \text{ km/h}} \\ &= 4 \text{ h} \end{aligned}$$

$$\begin{aligned} \text{Beza masa/Difference in time} &= 5 - 4 \\ &= 1 \text{ j/h} \end{aligned}$$