

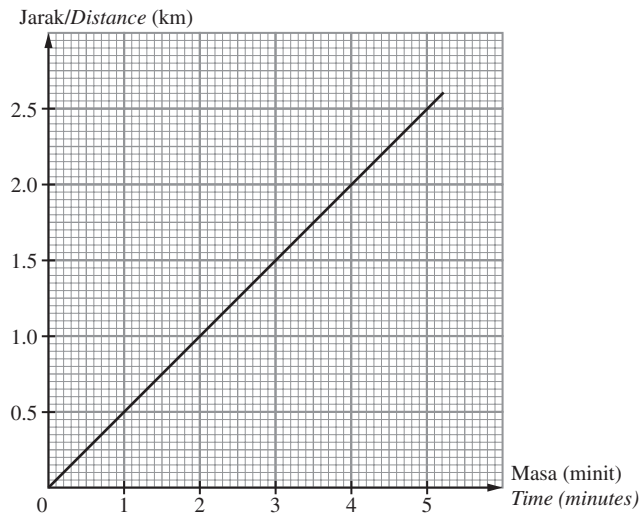
# Penyelesaian Lengkap

## PRAKTIS 7

### Praktis Formatif

#### 7.1 Graf Jarak-Masa Distance-Time Graphs

1

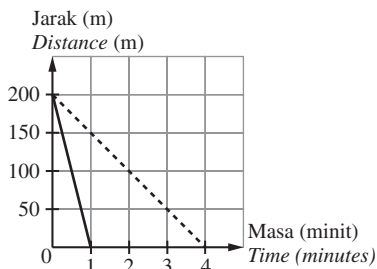


2 (a) Lori bergerak sejauh 150 km pulang ke kilang dalam tempoh masa 4 jam dengan laju  $37.5 \text{ km j}^{-1}$ .  
*The lorry moves 150 km return back to the factory in a period of 4 hours with a speed of  $37.5 \text{ km h}^{-1}$ .*

(b) Ya, Addy akan kena saman kerana dalam 2 jam yang pertama dia memandu dengan laju  $75 \text{ km j}^{-1} > 60 \text{ km j}^{-1}$ .

*Yes, Addy will be summoned because in the first two hours, he drove with a speed of  $75 \text{ km h}^{-1} > 60 \text{ km h}^{-1}$ .*

3 (a)

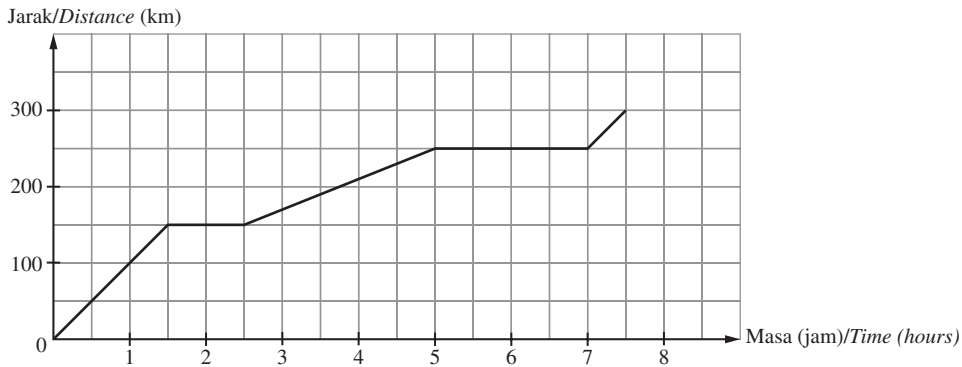


$$(b) (i) \frac{200 \text{ m}}{60 \text{ s}} = 3.33 \text{ m s}^{-1}$$

$$(ii) \frac{200 \text{ m}}{240 \text{ s}} = 0.833 \text{ m s}^{-1}$$

$$(iii) 3.33 \text{ m s}^{-1} - 0.833 \text{ m s}^{-1} = 2.497 \text{ m s}^{-1}$$

4 (a)



(b) Tempoh masa kereta berada dalam keadaan pegun ialah dari jam 1030 – jam 1130 dan dari jam 1400 – jam 1600 iaitu 3 jam.

*The period of time when the car is in stationary state are from 1030 hour – 1130 hour and 1400 hour – 1600 hour, that is 3 hours.*

(c) (ii)  $\frac{300 \text{ km}}{7.5 \text{ j/h}} = 40 \text{ km j}^{-1}/\text{km h}^{-1}$

5 (a) Katakan masa yang diambil dari kedai runcit ke rumah ialah  $x$ .

$$\frac{10 \text{ km}}{x \text{ j}} = 40 \text{ km j}^{-1}$$

$$x = 0.25 \text{ jam}$$

$$= 15 \text{ minit}$$

Masa yang diambil dari kedai runcit ke rumah Syam adalah sama dengan masa yang diambil dari rumah Syam ke kedai runcit, maka jumlah masa yang diambil dari B ke D ialah 30 minit. Jadi,  $t$  ialah jam 0910 dalam sistem 24 jam.

$$t = 0910$$

*Let the time taken from grocery shop to Syam's house be  $x$ .*

$$\frac{10 \text{ km}}{x \text{ h}} = 40 \text{ km h}^{-1}$$

$$x = 0.25 \text{ hour}$$

$$= 15 \text{ minutes}$$

*The time taken from grocery shop to Syam's house is the same as the time taken from Syam's house to grocery shop, therefore the time taken from B to D is 30 minutes. So,  $t$  is 0910 hour in the 24-hour system.*

$$t = 0910$$

(b) Motosikal bergerak dengan laju  $40 \text{ km j}^{-1}$  sejauh 10 km dalam masa 15 minit.

*The motorcycle moves with a speed of  $40 \text{ km h}^{-1}$  for a distance of 10 km in 15 minutes.*

6 (a) (i)  $\frac{18 \text{ km}}{0.5 \text{ j/h}} = 36 \text{ km j}^{-1}/\text{km h}^{-1}$

(ii) Kecerunan garis BC/Gradient of line BC

$$= \frac{(24 - 12)}{0.5 - \frac{t}{60}}$$

$$= \frac{12}{0.5 - \frac{t}{60}}$$

$$= \frac{12}{\frac{30 - t}{60}} = \frac{720}{30 - t}$$

Kecerunan garis AB/Gradient of line AB

$$= \frac{6}{t}$$

$$= \frac{60}{t}$$

$$= \frac{360}{t}$$

Diberi kecerunan garis BC – kecerunan garis AB

Given Gradient of line BC – Gradient of line AB = 10

$$\frac{720}{30 - t} - \frac{360}{t} = 10$$

$$720t - 360(30 - t) = 10t(30 - t)$$

$$720t - 10800 + 360t = 300t - 10t^2$$

$$780t - 10800 + 10t^2 = 0$$

$$78t - 1080 + t^2 = 0$$

$$(t - 12)(t + 90) = 0$$

$$t = 12 \text{ minit/minutes}$$

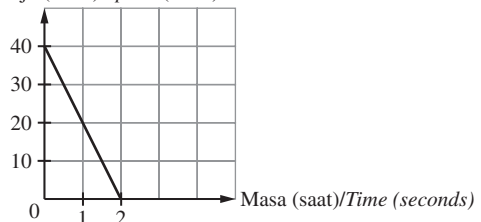
(b) Kereta bergerak sejauh 18 km dalam masa 30 minit dengan purata laju  $36 \text{ km j}^{-1}$ .

*The car moves for a distance of 18 km in 30 minutes with an average speed of  $36 \text{ km h}^{-1}$ .*

## 7.2 Graf Laju-Masa Speed-Time Graphs

1

Laju ( $\text{m s}^{-1}$ )/Speed ( $\text{m s}^{-1}$ )



2 (a) Jarak/Distance

$$= \frac{1}{2}(60 + 100)(25) + \frac{1}{2}(100)(80 - 25)$$

$$= 4750 \text{ m}$$

(b) Jarak/Distance =  $\frac{1}{2}(20)\left(\frac{5}{60}\right) + \frac{1}{2}(20 + 30)\left(\frac{5}{60}\right)$   
= 2.917 km

- 3 (a)  $\frac{1}{2}(60 + 100)(4) = 320 \text{ km}$   
 (b)  $100(1) = 100 \text{ km}$   
 (c)  $\frac{1}{2}(100)(3) = 150 \text{ km}$   
 (d)  $\frac{(320 + 100 + 150) \text{ km}}{8 \text{ j/h}}$   
 $= 71.25 \text{ km j}^{-1}/\text{km h}^{-1}$
- 4 (a) Dalam 1 jam yang terakhir, bas bergerak dengan  
 nyahpecutan  $30 \text{ km j}^{-2}$  sejauh  $15 \text{ km}$ .  
*In the last hour, the bus decelerates  $30 \text{ km h}^{-2}$  for  
 15 km.*  
 (b)  $\frac{1}{2}(20)(1) + \frac{1}{2}(20 + 30)(2)$   
 $= 60 \text{ km}$   
 (c)  $\frac{(30 - 20) \text{ km j}^{-1}/\text{km h}^{-1}}{(3 - 1) \text{ j/h}}$   
 $= 5 \text{ km j}^{-2}/\text{km h}^{-2}$
- 5 (a)  $\frac{30 \text{ m s}^{-1}}{40 \text{ s}} = 0.75 \text{ m s}^{-2}$   
 (b)  $\frac{30 \text{ m s}^{-1}}{(100 - 150) \text{ s}} = -0.6 \text{ m s}^{-2}$   
 (c)  $\frac{1}{2}(30)(40) + 60(30) + \frac{1}{2}(30)(50)$   
 $= 3150 \text{ m}$
- 6 (a) (i)  $\frac{1}{2}(y + 60)\left(\frac{20}{60}\right) + 60\left(\frac{40}{60}\right) + \frac{1}{2}(60 + 90)\left(\frac{40}{60}\right)$   
 $= 125$   
 $10(y + 60) + 2400 + 20(150) = 7500$   
 $10y + 600 + 2400 + 3000 = 7500$   
 $10y = 1500$   
 $y = 150 \text{ km j}^{-1}/\text{km h}^{-1}$   
 (ii)  $\frac{1}{2}(150 + 60)\left(\frac{20}{60}\right) + 60\left(\frac{40}{60}\right)$   
 $= 75 \text{ km j}^{-1}/\text{km h}^{-1}$   
 (b) Objek tersebut bergerak dengan laju seragam  
 $60 \text{ km j}^{-1}$  sejauh  $40 \text{ km}$  selama  $40$  minit.  
 Seterusnya, objek tersebut bergerak dengan  
 pecutan  $45 \text{ km j}^{-2}$  sejauh  $50 \text{ km}$  selama  $40$  minit.  
*The object moves with a uniform speed of  $60 \text{ km h}^{-1}$   
 for  $40 \text{ km}$  in  $40$  minutes. Then, the object moves  
 with an acceleration of  $45 \text{ km h}^{-2}$  for  $50 \text{ km}$  in  
 40 minutes.*
- 7 (a)  $\frac{1}{2}(2.5)\left(\frac{t}{4}\right) + \frac{1}{2}(2.5 + 3.5)\left(\frac{3t}{4}\right) - \frac{1}{2}(4)(t) = 5.625$   
 $1.25t + 9t - 8t = 22.5$   
 $2.25t = 22.5$   
 $t = 10 \text{ s}$   
 (b) Jumlah jarak yang dilalui/Total distance travelled  
 $= \frac{1}{2}(2.5)(2.5) + \frac{1}{2}(2.5 + 3.5)(7.5)$   
 $= 25.625 \text{ m}$   
 Laju purata/Average speed  $= \frac{25.625 \text{ m}}{10 \text{ s}}$   
 $= 2.5625 \text{ m s}^{-1}$

- (c) Raju bergerak dengan laju purata  $2.5625 \text{ m s}^{-1}$   
 dalam masa  $10$  saat sejauh  $25.625$  meter.  
*Raju moves with an average speed of  $2.5625 \text{ m s}^{-1}$  in  
 10 seconds for  $25.625$  metres.*  
 (d) Raju

### Praktis Sumatif

#### Kertas 1

- 1 A    2 C    3 D    4 D    5 D  
 6 B

#### Kertas 2

#### Bahagian/Section A

- 1 (a) (i) Raj  
 (ii) Raj mempunyai peluang paling tinggi untuk  
 menang kerana dia telah melalui jarak  $1050 \text{ m}$   
 pada saat yang ke-19 manakala Roy dan Wan  
 masing-masing hanya melalui jarak  $950 \text{ m}$  dan  
 $675 \text{ m}$ .  
*Raj has the highest chance to win because he  
 already travelled a distance of  $1050 \text{ m}$  up to  
 19 seconds whereas Roy and Wan only travelled  
 for  $950 \text{ m}$  and  $675 \text{ m}$  respectively.*  
 (b)  $(23 - 8) - (23 - 19)$   
 $= 11 \text{ s}$

#### Bahagian/Section B

- 1 (a)  $(0 - 6) \text{ s}$   
 (b)  $\frac{1}{2}(24 + u)(6) = 84$   
 $72 + 3u = 84$   
 $u = 4$   
 (c)  $\frac{1}{2}(28)(6) + 24(8) + \frac{1}{2}(24)(t - 14) = 324$   
 $84 + 192 + 12t - 168 = 324$   
 $12t = 216$   
 $t = 18$   
 (d)  $\frac{24 \text{ m s}^{-1}}{(18 - 14) \text{ s}} = 6 \text{ m s}^{-2}$
- 2 (a) (i)  $\frac{(g - 10)}{(0 - 720)} = -\frac{1}{60}$   
 $60g - 600 = 720$   
 $60g = 1320$   
 $g = 22 \text{ m}$   
 (ii)  $\frac{22 - 10}{60h} = \frac{1}{90}$   
 $60h = 1080$   
 $h = 18 \text{ min}$   
 (b) Persamaan garis DE/Equation of line DE:  
 $y = -\frac{1}{60}x + 22$   
 Persamaan garis AB/Equation of line AB:  
 $y = \frac{1}{90}x + 10$   
 Apabila kedua-dua zarah bertemu/When both  
 particles meet

$$-\frac{1}{60}x + 22 = \frac{1}{90}x + 10$$

$$\frac{x}{90} + \frac{x}{60} = 12$$

$$2x + 3x = 2\,160$$

$$5x = 2\,160$$

$$x = 432$$

$$t = \frac{432}{60}$$

$$= 7.2 \text{ minit/minutes}$$

$$3 \text{ (a) } \frac{v}{\frac{10}{60}} = \frac{100}{\frac{25}{60}}$$

$$6v = 240$$

$$v = 40 \text{ km j}^{-1}/\text{km h}^{-1}$$

(b) Kereta bergerak dengan laju seragam  $40 \text{ km j}^{-1}$  sejauh  $10 \text{ km}$  selama  $15$  minit.

*The car moves with a uniform speed  $40 \text{ km h}^{-1}$  for  $10 \text{ km}$  in  $15 \text{ minutes}$ .*

$$(c) \frac{100}{\frac{25}{60}} = 240 \text{ km j}^{-2}/\text{km h}^{-2}$$

$$4 \text{ (a) (i) } 0.5(4 + h)(3) + 0.5(2 + h)(1) = 10$$

$$6 + 1.5h + 1 + 0.5h = 10$$

$$h = 1.5 \text{ km j}^{-1}/\text{km h}^{-1}$$

$$(ii) \frac{10 \text{ km}}{4 \text{ j/h}} = 2.5 \text{ km j}^{-1}/\text{km h}^{-1}$$

$$(b) 1100$$