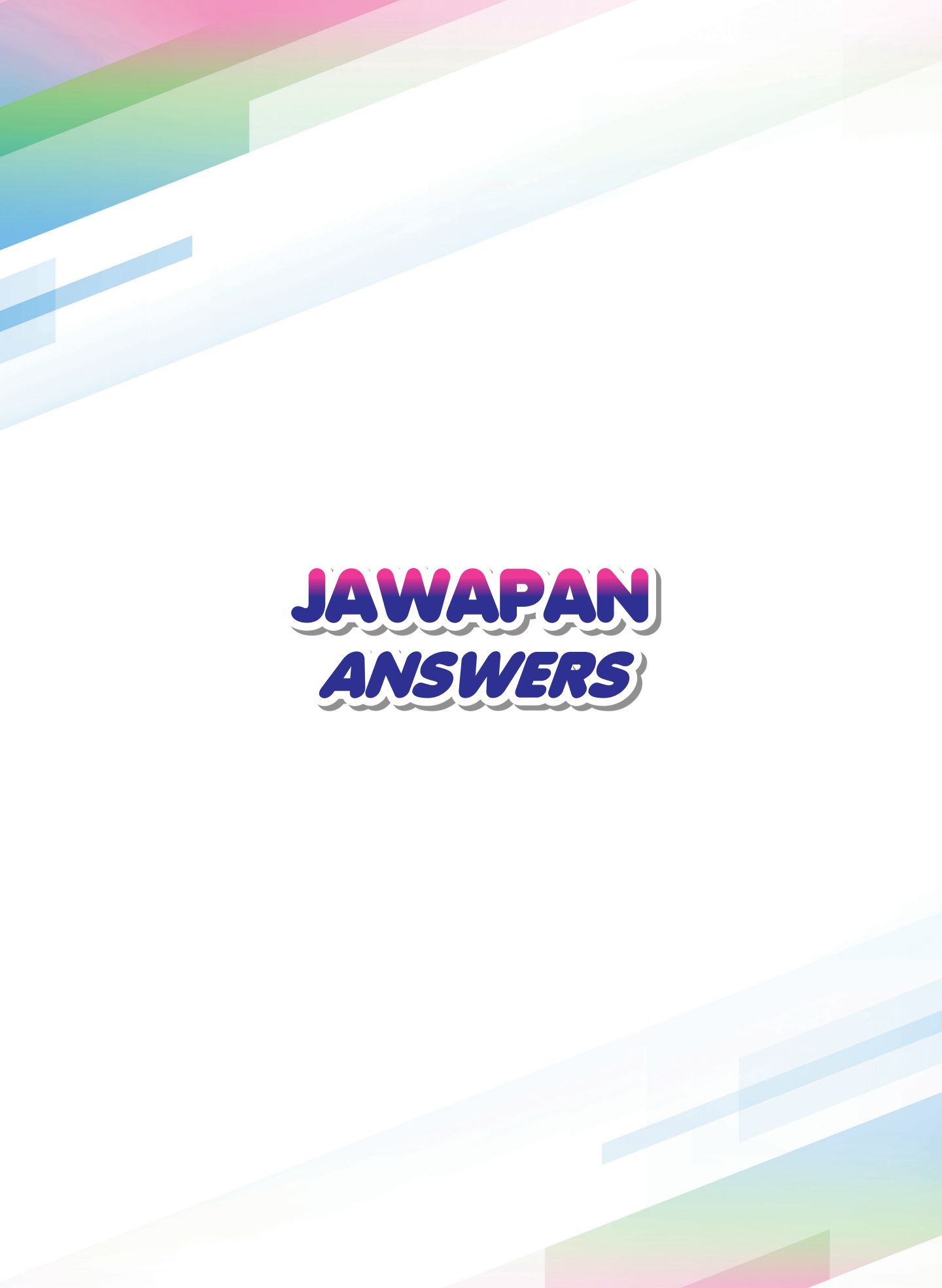




JAWAPAN ***ANSWERS***

BAHAGIAN A

- 1 A
- 2 B
- 3 D
- 4 B
- 5 B
- 6 B
- 7 B
- 8 D
- 9 B
- 10 C

BAHAGIAN B

- 1 (a) 2^6
(b) 3^4
(c) 5^3
(d) 13^2
- 2 (a) ✗
(b) ✓
(c) ✗
(d) ✓
- 3 (a) $\sqrt[3]{2}$
(b) $\sqrt[3]{16}$
(c) $\sqrt[8]{15}$
(d) $\sqrt{30}$

BAHAGIAN C

- 1 (a) (i) c^9
(ii) r^6
(iii) s^{-20}
- (b) $x^2 = 9 \times 216^{-\frac{2}{3}}$
 $x^2 = 9 \times (6^3)^{-\frac{2}{3}}$
 $x^2 = 9 \times \frac{1}{36}$
 $x^2 = \frac{1}{4}$
 $x = \frac{1}{2}$
- (c) $8^m \times 64^m + 4 \div 2^6 = 1$
 $2^{3m} \times 2^{6(m+4)} \div 2^6 = 2^0$
 $3m + 6m + 24 - 6 = 0$
 $9m + 18 = 0$
 $9m = -18$
 $m = -2$

- 2 (a) $7^3 \times 7^2 \div 7^8$
 $= 7^{3+2-8}$
 $= 7^{-3}$
- (b) $343^{\frac{2}{3}} \times 9^{\frac{1}{2}}$
 $= 49 \times 3$
 $= 147$
- (c) $2^m \times 16^n = 64$
 $2^m \times 2^{4n} = 2^6$
 $m + 4n = 6 \dots\dots \textcircled{1}$
 $\frac{1}{3^m} \times 3^n = 3^{-1}$
 $3^{-m} \times 3^n = 3^{-1}$
 $-m + n = -1 \dots\dots \textcircled{2}$
 $\textcircled{1} + \textcircled{2}: 5n = 5$
 $n = 1$

Gantikan $n = 1$ ke dalam $\textcircled{2}$

Substitute $n = 1$ into $\textcircled{2}$

$$-m + n = -1$$

$$-m + 1 = -1$$

$$-m = -1 - 1$$

$$-m = -2$$

$$m = 2$$

- 3 (a) $a^6 b^3 \times a^{-3} b^{-2} \times a^{-4} b^3$
 $= a^{6+(-3)+(-4)} b^{3+(-2)+3}$
 $= a^{-1} b^4$
- (b) $(p^2)^3 \div p^3 = p^n$
 $p^6 \div p^3 = p^n$
 $n = 6 - 3$
 $n = 3$
- (c) $(63)^{\frac{1}{2}} \times \sqrt[4]{49}$
 $= (9 \times 7)^{\frac{1}{2}} \times (7^2)^{\frac{1}{4}}$
 $= (9^{\frac{1}{2}} \times 7^{\frac{1}{2}}) \times 7^{\frac{1}{2}}$
 $= 3 \times 7$
 $= 21$

BAHAGIAN A

- 1 B
- 2 B
- 3 B
- 4 B
- 5 C
- 6 D
- 7 D
- 8 B
- 9 D
- 10 A

BAHAGIAN B

- 1 (a) 2
(b) 4
(c) 4 (jika tahap kejituan ialah sa terhampir)
(if level of accuracy is to the nearest one)
atau / or
2 (jika tahap kejituan ialah ratus terhampir)
(if level of accuracy is to the nearest hundred)
(d) 5
- 2 (a) 4.20×10^{-3}
(b) 7.402×10^2
(c) 2.567×10^4
(d) 8.104×10^{-1}
- 3 (a) ✗
(b) ✓
(c) ✗
(d) ✓

BAHAGIAN C

- 1 (a) (i) 4.745×10^1
(ii) 1.0235×10^4
(iii) 1.4×10^{-3}

(b) $0.3974 \times 0.3 = 0.11922$

 $0.11922 = 0.12$ (2 a.b./s.f.)

(c) Luas / Area = $\frac{1}{2} \times 10 + 18 \times 12$
 $= 168 \text{ cm}^2$
 $= 1.68 \times 10^2 \times (10^{-2})^2$
 $= 1.68 \times 10^2 \text{ m}^2$

$$\begin{aligned}
 2 \quad (a) \quad & \frac{4.165 \times 10^8}{4.9 \times 10^{-3}} \\
 &= 0.85 \times 10^{8-(-3)} \\
 &= 0.85 \times 10^{11} \\
 &= 8.5 \times 10^{-1} \times 10^{11} \\
 &= 8.5 \times 10^{10}
 \end{aligned}$$

- (b) (i) 82 300
(ii) 0.027
(iii) 370.2

$$\begin{aligned}
 (c) \quad & (4.5 \times 10^3 \times 12 \times 7) \\
 &= 378 \times 10^3 \\
 &= 3.78 \times 10^2 \times 10^3 \\
 &= 3.78 \times 10^5
 \end{aligned}$$

$$\begin{aligned}
 3 \quad (a) \quad & 5.28 \times 10^{-7} \div 1.2 \times 10^3 \\
 &= 4.4 \times 10^{-7-3} \\
 &= 4.4 \times 10^{-10}
 \end{aligned}$$

$$\begin{aligned}
 (b) \quad & 9.32 \times 10^{12} + 4.12 \times 10^{14} \\
 &= 9.32 \times 10^{12} + 4.12 \times 10^2 \times 10^{12} \\
 &= (9.32 + 412) \times 10^{12} \\
 &= 421.32 \times 10^{12} \\
 &= 4.2132 \times 10^2 \times 10^{12} \\
 &= 4.2132 \times 10^{14}
 \end{aligned}$$

$$\begin{aligned}
 (c) \quad & t = 2.5j \\
 &= 2.5(1.4 \text{ m}) \\
 &= 3.5 \text{ m} \\
 \text{Isi padu / Volume} &= \frac{22}{7} t j^2 \\
 &= \frac{22}{7} \times 1.42 \times 3.5 \\
 &= 21.56 \text{ m}^3 \\
 &= 21.6 \text{ m}^3
 \end{aligned}$$

BAHAGIAN A

- 1 D
- 2 D
- 3 B
- 4 D
- 5 C
- 6 B
- 7 C
- 8 C
- 9 C
- 10 B

BAHAGIAN B

- 1 (a) (i) Faedah mudah / *Simple interest*
 (ii) Faedah kompaun / *Compound interest*
 (b) (i) ✓
 (iv) ✓
- 2 (a) ✓
 (b) ✗
 (c) ✓
 (d) ✗

BAHAGIAN C

- 1 (a) Jumlah faedah
Total interest

$$= \text{RM}180\,000 \times \frac{4.5}{100} \times 10$$

$$= \text{RM}81\,000$$

 Kadar bayaran balik
Repayment rate

$$= \frac{(\text{RM}180\,000 + \text{RM}81\,000)}{10 \times 12}$$

$$= \text{RM}2\,175$$
 (b) Jumlah faedah
Total interest

$$= \left(\text{RM}180\,000 \times \frac{4.75}{100} \times 3 \right) +$$

$$\left(\text{RM}180\,000 \times \frac{4.00}{100} \times 6 \right)$$

$$= \text{RM}25\,650 + \text{RM}43\,200$$

$$= \text{RM}68\,850$$
 Kadar bayaran balik
Repayment rate

$$= \frac{(\text{RM}180\,000 + \text{RM}68\,850)}{9 \times 12}$$

$$= \text{RM}2\,304.17$$

- (c) Bank Yayasan: Faedah yang dikenakan adalah kurang daripada Bank Amanah.

Bank Yayasan: The interest charged is less than Bank Amanah.

- 2 (a) Nilai matang
Matured value

$$= \text{RM}9\,000 \left(1 + \frac{3.4\%}{2} \right)^{2 \times 5}$$

$$= \text{RM}10\,652.51$$
 (b) (i) Jumlah faedah
Total interest

$$= \text{RM}25\,000 \times \frac{4.25}{100} \times 4$$

$$= \text{RM}4\,250$$
 (ii) Nilai matang
Matured value

$$= \text{RM}25\,000 \left(1 + \frac{4.25\%}{3} \right)^{3 \times 4}$$

$$= \text{RM}29\,597.29$$
 Faedah
Interest

$$= \text{RM}29\,597.29 - \text{RM}25\,000$$

$$= \text{RM}4\,597.29$$
 (iii) Perbezaan
Differences

$$= \text{RM}4\,597.29 - \text{RM}4\,250$$

$$= \text{RM}347.29$$
- 3 (a) Hibah bagi setahun
Hibah for a year

$$= \frac{\text{RM}969}{2}$$

$$= \text{RM}484.50$$
 Peratus hibah
Percentage of hibah

$$= \frac{\text{RM}484.50}{\text{RM}17\,000} \times 100$$

$$= 2.85\%$$

- (b) (i) Wang pendahuluan

Down payment

$$= \text{RM}490\,000 \times 10\%$$

$$= \text{RM}49\,000$$

- (ii) Jumlah pinjaman

Total loan

$$= \text{RM}490\,000 - \text{RM}49\,000$$

$$= \text{RM}441\,000$$

- (iii) Ansuran bayaran balik

Repayment instalment

$$= \frac{\text{RM}441\,000 + (\text{RM}441\,000 \times 3.75\% \times 30)}{30 \times 12}$$

$$= \frac{\text{RM}937\,125}{360}$$

$$= \text{RM}2\,603.13$$

BAB 4

Lukisan Berskala Scale Drawings

BAHAGIAN A

- 1 A
- 2 A
- 3 A
- 4 B
- 5 C
- 6 C
- 7 B
- 8 A
- 9 C
- 10 C

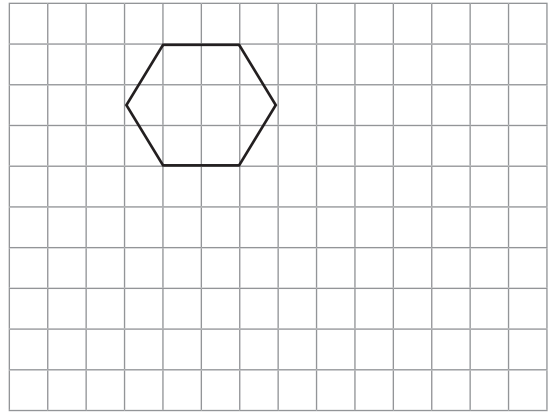
BAHAGIAN B

- 1 (a) $1 : \frac{1}{6}$
(b) $1 : \frac{1}{2}$
(c) $1 : 1$
(d) $1 : 2$
- 2 (a) 7.5
(b) 15
(c) 45
(d) 3

BAHAGIAN C

- 1 (a) $6.3 : 2.1$
 $= (6.3 \div 6.3) : (2.1 \div 6.3)$
 $= 1 : \frac{1}{3}$

- (b)



- (c) Skala / Scale

$$= 17 \text{ cm} : 8.5 \text{ m}$$

$$= 0.17 \text{ m} : 8.5 \text{ m}$$

$$= 17 : 850$$

$$= 1 : 50$$

$$\frac{1}{50} = \frac{12}{\text{Lebar sebenar / Actual width}}$$

Lebar sebenar / Actual width

$$= 12 \times 50$$

$$= 600 \text{ cm}$$

$$= 6 \text{ m}$$

Luas / Area

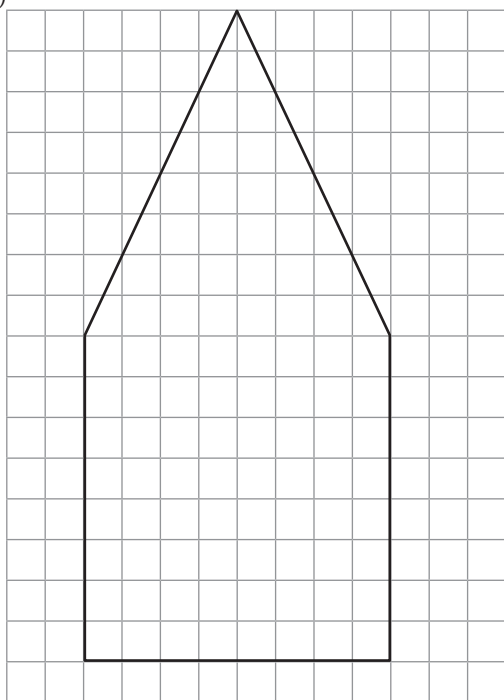
$$= 8.5 \text{ m} \times 6 \text{ m}$$

$$= 51 \text{ m}^2$$

- 2 (a) (i) $1 \text{ cm} : 5 \text{ km}$
 $6 \text{ cm} : 6 \times 5$
 $6 \text{ cm} : 30 \text{ km}$
(ii) $\frac{21.5 \text{ km}}{5 \text{ km}} = 4.3$
 $\therefore 4.3 \text{ cm}$

- (b) $5.5 \text{ m} = 55 \text{ cm}$
 $1 : n = 5.5 \text{ cm} : 5.5 \text{ m}$
 $= 5.5 : 550$
 $= 1 : 100$
 $\therefore n = 100$

3 (a)



- (b) 4 cm : 600 m
4 cm : 60 000 cm
1 : 15 000

$$(c) \frac{\text{Tinggi lukisan} / \text{Height of drawing}}{24} = \frac{1}{\frac{1}{3}}$$

$$\begin{aligned} \text{Tinggi lukisan} \\ \text{Height of drawing} \\ &= 24 \times 3 \\ &= 72 \text{ cm} \end{aligned}$$

$$= \frac{\text{Panjang lukisan} / \text{Length of drawing}}{36} = \frac{1}{\frac{1}{3}}$$

$$\begin{aligned} \text{Panjang lukisan} \\ \text{Length of drawing} \\ &= 36 \times 3 \\ &= 108 \text{ cm} \end{aligned}$$

$$\begin{aligned} \text{Luas lukisan} \\ \text{Area of drawing} \\ &= \frac{1}{2} \times 72 \times 108 \\ &= 3\,888 \text{ cm}^2 \end{aligned}$$

BAB 5

Nisbah Trigonometri Trigonometric Ratios

BAHAGIAN A

- 1 A
- 2 D
- 3 D
- 4 B
- 5 C
- 6 B
- 7 B
- 8 C
- 9 C
- 10 B

BAHAGIAN B

- 1 (a) $\frac{1}{2}$
(b) $\frac{1}{\sqrt{2}}$
(c) 1
(d) $\frac{\sqrt{3}}{2}$
- 2 (a) ✗
(b) ✓
(c) ✓
(d) ✗
- 3 $8 \sin 30^\circ + 2 \cos 60^\circ - 2 \tan 45^\circ$
 $= 8\left(\frac{1}{2}\right) + 2\left(\frac{1}{2}\right) - 2(1)$
 $= 4 + 1 - 2$
 $= 3$

BAHAGIAN C

- 1 (a) (i) 0.6820
(ii) 0.8619
(iii) 2.5386
(b) $2(1) + 7\left(\frac{1}{2}\right) = 2 + 7\frac{1}{2}$
 $= 9\frac{1}{2}$
(c) $\tan x = \frac{4}{3}$
 $\tan x = \frac{4}{3} = \frac{\text{Panjang OP} / \text{Length of OP}}{\text{Panjang NP} / \text{Length of NP}}$
 $= \frac{4}{3} = \frac{\text{Panjang OP} / \text{Length of OP}}{12}$

Panjang OP

Length of OP

$$= \frac{4}{3} \times 12$$

$$= 16 \text{ cm}$$

Panjang MN

Length of MN

$$= \sqrt{13^2 - 12^2}$$

$$= 5 \text{ cm}$$

Panjang NO

Length of NO

$$= \sqrt{12^2 + 16^2}$$

$$= 20 \text{ cm}$$

Panjang OM

Length of OM

$$= (20 - 5) \text{ cm}$$

$$= 15 \text{ cm}$$

$$\begin{aligned} 2 \quad (a) \quad \tan \theta &= \frac{3}{5} = \frac{SP}{PR} \\ &= \frac{3}{5} = \frac{12}{12 + QR} \\ 3(12 + QR) &= 5 \times 12 \\ 36 + 3QR &= 60 \\ 3QR &= 60 - 36 \\ 3QR &= 24 \\ QR &= 8 \text{ cm} \end{aligned}$$

$$\begin{aligned} (b) \quad \sqrt{12^2 + 20^2} \\ &= \sqrt{544} \\ &= 23.3 \text{ cm} \end{aligned}$$

$$(c) \quad \tan x = \frac{12}{12} = 1$$

$$\begin{aligned} (d) \quad \tan \theta &= \frac{3}{5} \\ \theta &= \tan^{-1}\left(\frac{3}{5}\right) \\ \theta &= 30.96^\circ \end{aligned}$$

$$\begin{aligned} 3 \quad (a) \quad 8\left(\frac{1}{\sqrt{2}}\right)\left(\frac{\sqrt{3}}{2}\right) + 6\left(\frac{1}{\sqrt{2}}\right)\left(\frac{1}{2}\right) \\ &= \left(\frac{4\sqrt{3}}{\sqrt{2}}\right) + \left(\frac{3}{\sqrt{2}}\right) \\ &= \frac{3 + 4\sqrt{3}}{\sqrt{2}} \end{aligned}$$

$$\begin{aligned} (b) \quad 53^\circ + (12 \div 60)^\circ \\ &= 53^\circ + 0.2^\circ \\ &= 53.2^\circ \end{aligned}$$

$$\begin{aligned} (c) \quad (i) \quad \cos / \cos y &= \frac{5}{13} \\ y &= \cos^{-1} / \cos^{-1} \frac{5}{13} \\ y &= 67.4^\circ \end{aligned}$$

(ii) Panjang RS

Length of RS

$$= \sqrt{13^2 - 5^2}$$

$$= 12 \text{ cm}$$

Panjang PS

Length of PS

$$= \sqrt{10^2 + 24^2}$$

$$= 26 \text{ cm}$$

Perimeter

$$= 10 \text{ cm} + 26 \text{ cm} + 5 \text{ cm} + 12 \text{ cm} + 13 \text{ cm}$$

$$= 66 \text{ cm}$$

BAB 6

Sudut dan Tangen bagi Bulatan Angles and Tangents of Circles

BAHAGIAN A

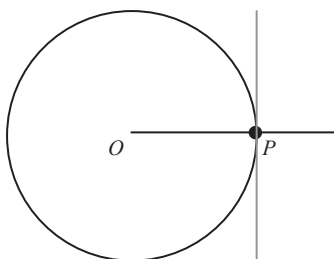
- 1 B
- 2 B
- 3 B
- 4 C
- 5 D
- 6 D
- 7 B
- 8 C
- 9 B
- 10 A

BAHAGIAN B

- 1 (a) AB, GH
(b) $x = 109^\circ$
 $y = 71^\circ$
- 2 (a) ✗
(b) ✓
(c) ✓
(d) ✗
- 3 r, u, v, q

BAHAGIAN C

1 (a)



- (b) (i) 50°
 (ii) $y = 180^\circ - 128^\circ$
 $= 52^\circ$
 (iii) $z = 90^\circ$

- (c) $x = 84^\circ$
 $y = 180^\circ - 42^\circ$
 $= 138^\circ$
 $z = 42^\circ$

2 (a) 90°

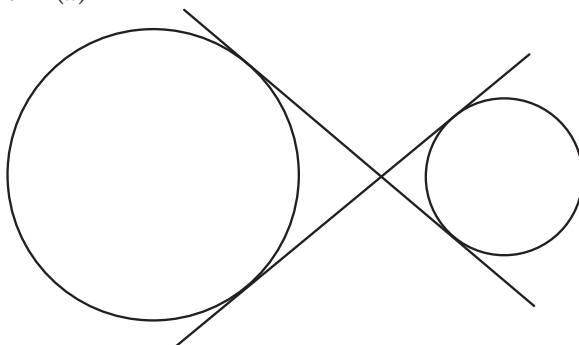
- (b) $360^\circ - 90^\circ - 90^\circ - 60^\circ$
 $= 110^\circ$

- (c) $\frac{180^\circ - 110^\circ}{2}$
 $= \frac{70}{2}$
 $= 35^\circ$

- (d) $\frac{110^\circ}{2}$
 $= 55^\circ$

- (e) $\cos / \cos 35^\circ = \frac{9}{OQ}$
 $OQ = \frac{9}{\cos / \cos 35^\circ}$
 $OQ = 10.99 \text{ cm}$

3 (a)



- (b) (i) $p = 44^\circ \times 2$
 $= 88^\circ$

- (ii) $q = 90^\circ$

- (iii) $\angle NCB = (180^\circ - 88^\circ) \div 2$
 $= 46^\circ$
 $\angle ACN = (360^\circ - 44^\circ - 272^\circ) \div 2$
 $= 22^\circ$
 $\angle ACH = 90^\circ - 22^\circ$
 $= 68^\circ$
 $\angle HCD = 180^\circ - 46^\circ - 22^\circ - 68^\circ$
 $= 44^\circ$
 $r = 44^\circ$

- (iv) $s = 90^\circ - 44^\circ$
 $= 46^\circ$

BAB 7

Pelan dan Dongakan Plans and Elevations

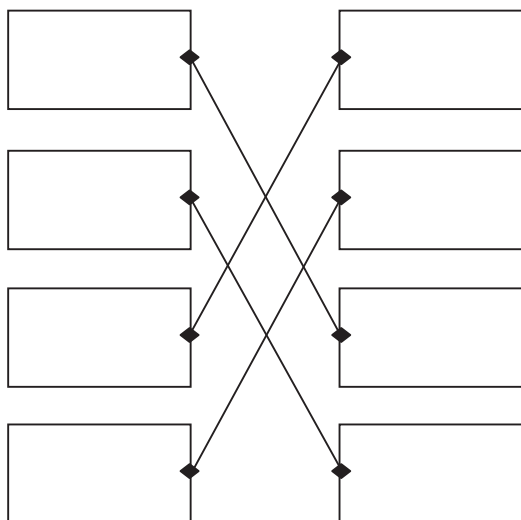
BAHAGIAN A

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

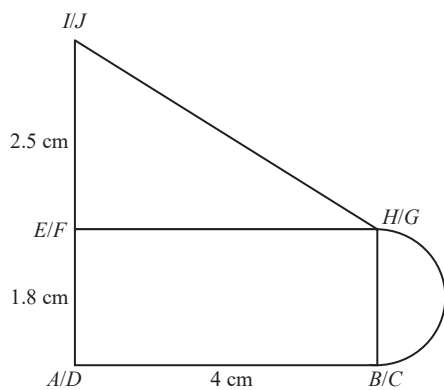
BAHAGIAN B

- 1 (a) Benar
 True
 (b) Palsu
 False
 (c) Palsu
 False
 (d) Benar
 True

2

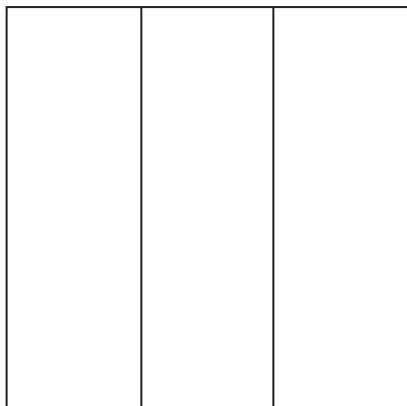


3

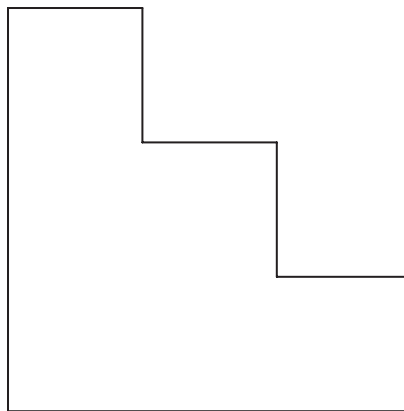


BAHAGIAN C

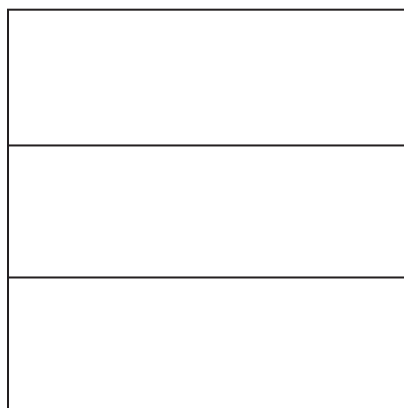
1 (a)



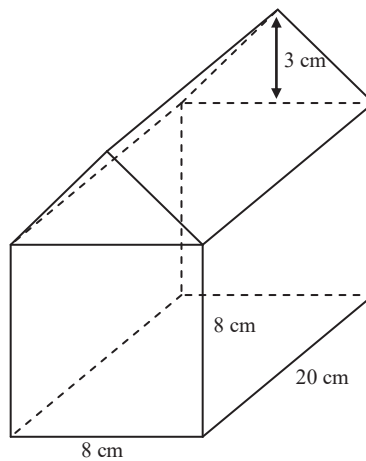
(b)



(c)



2 (a)



(b) Prisma
Prism

(c) Luas
Area

$$\begin{aligned}
 &= 2\left(\frac{1}{2} \times 3 \times 8\right) \text{ cm}^2 + 2(8 \times 8) \text{ cm}^2 + \\
 &\quad 3(20 \times 8) \text{ cm}^2 + 2(5 \times 20) \text{ cm}^2 \\
 &= 24 \text{ cm}^2 + 128 \text{ cm}^2 + 480 \text{ cm}^2 + 200 \text{ cm}^2 \\
 &= 832 \text{ cm}^2
 \end{aligned}$$

(d) Isi padu

$$\begin{aligned} \text{Volume} &= (8 \times 8 \times 20) \text{ cm}^3 + \left(\frac{1}{2} \times 8 \times 3 \times 20 \right) \\ &= 1280 \text{ cm}^3 + 240 \text{ cm}^3 \\ &= 1520 \text{ cm}^3 \end{aligned}$$

BAB 8

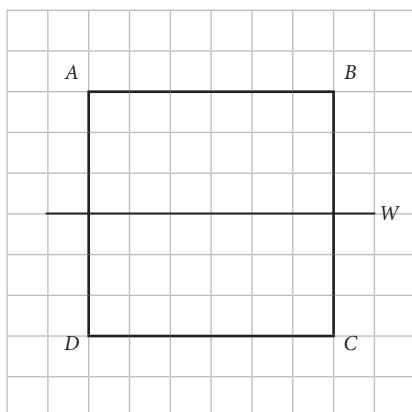
Lokus dalam Dua Dimensi Loci in Two Dimensions

BAHAGIAN A

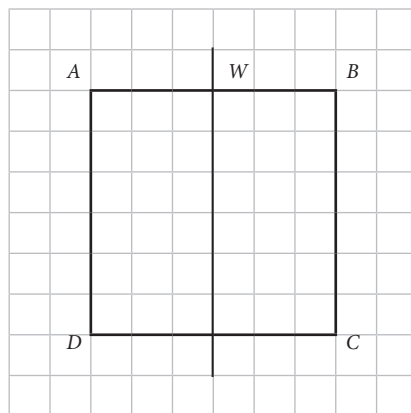
- 1 B
- 2 A
- 3 C
- 4 A
- 5 B
- 6 B
- 7 B
- 8 A
- 9 B
- 10 B

BAHAGIAN B

- 1 (a) Pembahagi dua sudut
Angle bisector
(b) Bulatan
Circle
(c) Pembahagi dua sama serenjang
Perpendicular bisector
(d) Garis selari
Parallel line
- 2 (a) ✓
(b) ✗
(c) ✓
(d) ✓
- 3 (a)

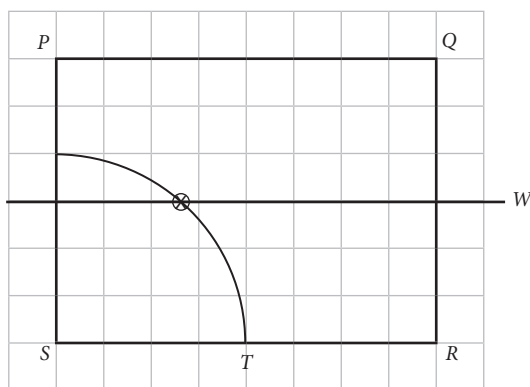


(b)

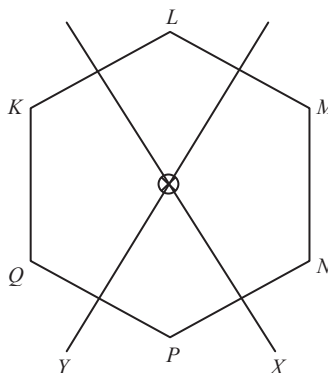


BAHAGIAN C

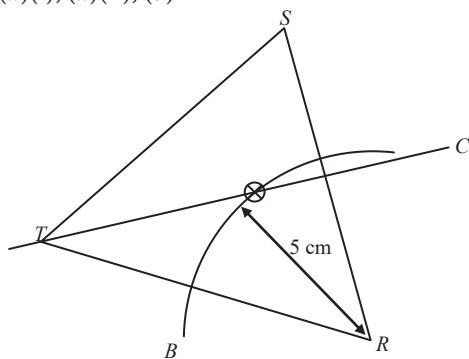
- 1 (a)(i), (a)(ii), (b)



- 2 (a)(i), (a)(ii), (b)



3 (a)(i), (a)(ii), (b)



BAB 9

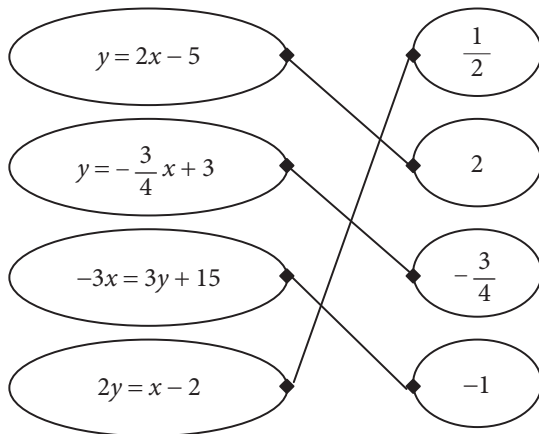
Garis Lurus Straight Lines

BAHAGIAN A

- 1 B
- 2 C
- 3 B
- 4 A
- 5 D
- 6 D
- 7 C
- 8 A
- 9 A
- 10 B

BAHAGIAN B

1



- 2 (a) ✓
- (b) ✗
- (c) ✗
- (d) ✓

- 3 (a) Ya
Yes
- (b) Tidak
No
- (c) Tidak
No
- (d) Tidak
No

BAHAGIAN C

1 (a) Kecerunan OA

Gradient of OA

$$\begin{aligned} &= \frac{12 - 0}{7 - 0} \\ &= \frac{12}{7} \end{aligned}$$

(b) Kecerunan OC

Gradient of OC

$$\begin{aligned} &= \frac{0 - (-4)}{0 - 14} \\ &= -\frac{4}{14} \\ &= -\frac{2}{7} \end{aligned}$$

(c) Persamaan garis lurus BC

Equation of straight line BC

$$y = mx + c$$

$$-4 = \frac{12}{7}(14) + c$$

$$\begin{aligned} -4 &= 24 + c \\ c &= -28 \end{aligned}$$

$$y = \frac{12}{7}x - 28$$

(d) $y = \frac{12}{7}x - 28$

$$y = 0, 0 = \frac{12}{7}x - 28$$

$$\frac{12}{7}x = 28$$

$$x = 28 \times \frac{7}{12}$$

$$x = 16 \frac{1}{3}$$

2 (a) $2x + 3y = 1$ dan / and $2x + 3y = 1$

$$2x + 3y = 1$$

$$3y = -2x + 1$$

$$y = -\frac{2}{3}x + \frac{1}{3}$$

$$m_1 = -\frac{2}{3}$$

$$3x + 4y = 3$$

$$4y = -3x + 3$$

$$y = -\frac{3}{4}x + \frac{3}{4}$$

$$m_2 = -\frac{3}{4}$$

$$m_1 \neq m_2$$

(b) $(2, 7), y - 3 = 5x$

Kiri / Left

$$= y - 3$$

$$= 7 - 3$$

$$= 4$$

Kanan / Right

$$= 5(2)$$

$$= 10$$

Kiri $\neq$ Kanan

Left $\neq$ Right

Titik $(2, 7)$ tidak terletak pada garis lurus
 $y - 3 = 5x$.

*The point $(2, 7)$ does not lie on the straight line
 $y - 3 = 5x$.*

(c) $y = -4x + 8$

$$4x + y = 8$$

$$\frac{4x}{8} + \frac{y}{8} = \frac{8}{8}$$

$$\frac{x}{2} + \frac{y}{8} = 1$$

3 (a) $\frac{x}{3} + \frac{y}{9} = 1$

$$\frac{9x}{27} + \frac{3y}{27} = 1$$

$$9x + 3y = 27$$

$$3y = -9x + 27$$

$$y = -3x + 9$$

(b) $A(1, 5)$ dan / and $B(2, 4)$

$$m = \frac{(4 - 5)}{(2 - 1)}$$

$$= \frac{-1}{1}$$

$$= -1$$

$$y = mx + c$$

$$5 = -1(1) + c$$

$$5 = -1 + c$$

$$c = 5 + 1$$

$$c = 6$$

$$y = -x + 6$$

(c) $y = 2x - 5$ dan / and $py = 4x + 6$

$$py = 4x + 6$$

$$y = \frac{4}{p}x + \frac{6}{p}$$

$$\frac{4}{p} = 2$$

$$p = \frac{4}{2}$$

$$p = 2$$

UJIAN PERTENGAHAN SESI AKADEMIK

BAHAGIAN A

- 1 B
- 2 C
- 3 C
- 4 A
- 5 C
- 6 C
- 7 D
- 8 C
- 9 C
- 10 B
- 11 A
- 12 B
- 13 D
- 14 B
- 15 A
- 16 B
- 17 C
- 18 D
- 19 A
- 20 D

BAHAGIAN B

- 1 (a) x^{20}
 (b) 1
 (c) m^{-4}
 (d) m^{-2}
- 2 (a) ✓
 (b) ✗
 (c) ✓
 (d) ✗
- 3 (a) ✗
 (b) ✓
 (c) ✓
 (d) ✗

- 4 (a) lebih kecil
smaller
(b) sama saiz
same size
(c) lebih besar
larger
(d) lebih besar
larger

- 5 (a) $30^\circ 42'$
(b) $47^\circ 48'$
(c) $12^\circ 36'$
(d) $57^\circ 30'$

BAHAGIAN C

1 (a) $4^3 \div 64^{\frac{1}{4}} \div (4^3)^{\frac{1}{4}}$
 $= 4^3 \div (4^3)^{\frac{1}{4}} \div 4^{\frac{3}{4}}$
 $= 4^{3 - \frac{3}{4} - \frac{3}{4}}$
 $= 4^{\frac{3}{2}}$

(b) Jumlah faedah
Total interest
 $= \text{RM}700 \times 6.5\% \times 2$
 $= \text{RM}91$

(c) Bilangan sisi poligon
Number of polygon sides
 $= \frac{360^\circ}{7}$
 $= 5$

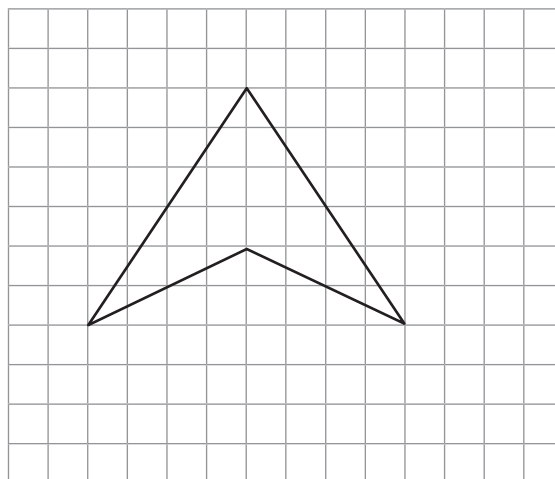
$$\frac{\text{Panjang lukisan} / \text{Length of drawing}}{12} = \frac{1}{6}$$

Panjang lukisan / Length of drawing = 2 cm

Perimeter = 5×2 cm
 $= 10$ cm

2 (a) $2pq$
 $= 2 \times 4.2 \times 10^2 \times 5.7 \times 10^5$
 $= 47.88 \times 10^{2+5}$
 $= 47.88 \times 10^7$
 $= 4.788 \times 10^8$
 $= 4.8 \times 10^8$

(b)



(c) Jumlah pulangan pelaburan
Total of the return on investment
 $= \text{RM}825\,000 - \text{RM}52\,000 - \text{RM}420\,000 -$
 $\text{RM}280\,000 - \text{RM}5\,000 - \text{RM}4\,000 -$
 $\text{RM}7\,000$
 $= \text{RM}57\,000$

Nilai pulangan pelaburan
Return on investment value
 $= \frac{\text{RM}57\,000}{\text{RM}520\,000} \times 100\%$
 $= 10.96\%$

3 (a) Panjang KL
Length of KL
 $= \frac{12}{13} \times 26$ cm
 $= 24$ cm

Panjang q
Length of q
 $= \sqrt{26^2 - 24^2}$
 $= \sqrt{100}$
 $= 10$ cm

(b) (i) 4.25×10^{-4}
(ii) 6.589×10^1
(iii) 8.9344×10^4

(c) $6^2 \times 6^{3(x+1)} = 6^{2x}$
 $2 + 3(x+1) = 2x$
 $2 + 3x + 3 = 2x$
 $3x + 5 = 2x$
 $3x - 2x = -5$
 $x = -5$

4 (a) $2.74 \times 10^1 \times 10^4 + 9.85 \times 10^4$
 $= (27.4 + 9.85) \times 10^4$
 $= 37.25 \times 10^4$
 $= 3.725 \times 10^1 \times 10^4$
 $= 3.725 \times 10^5$

(b) Luas
Area
 $= (11.4 \times 3) \text{ cm} \times (21 \times 3) \text{ cm}$
 $= 34.2 \text{ cm} \times 63 \text{ cm}$
 $= 2\,154.6 \text{ cm}^2$

(c) Nilai keuntungan
Profit value
 $= (\text{RM}4.50 - \text{RM}2.75) \times 3\,500$
 $= \text{RM}6\,125$

Nilai pulangan pelaburan
Return on investment value
 $= \frac{6\,125}{9\,625} \times 100\%$
 $= 63.64\%$

5 (a) (i) 8
(ii) 25
(iii) 27

(b) $64^{\frac{2}{6}} + 81^{\frac{3}{4}} - 3^{-1}$
 $= (2^6)^{\frac{2}{6}} + (3^4)^{\frac{3}{4}} - 3^{-1}$
 $= 2^2 + 3^3 - 3^{-1}$
 $= 4 + 27 - \frac{1}{3}$
 $= 30\frac{2}{3}$

(c) Lukisan berskala / *Scale drawing*
Objek / *Object*
 $= \frac{26.4}{6.6}$
 $= \frac{4}{1}$

Skala
Scale
 $= 4 : 1 \text{ atau } 1 : 1$
 $4 : 1 \text{ or } 1 : 1$

6 (a) $\frac{64\,085}{4}$
 $= 16\,021.25$
 $= 1.602125 \times 10^4$
 $= 1.602 \times 10^4$

(b) Jumlah bayaran balik
Repayment amount
 $= \text{RM}48\,000 + (\text{RM}48\,000 \times 4.25\% \times 6)$
 $= \text{RM}48\,000 + \text{RM}12\,528$
 $= \text{RM}60\,528$

(c) Asas 2
Base of 2

2	512
2	256
2	128
2	64
2	32
2	16
2	8
2	4
2	2
	1

$\therefore 2^9$

Asas 8

Base of 8

8	512
8	64
8	8
	1

$\therefore 8^3$

UJIAN AKHIR SESI AKADEMIK

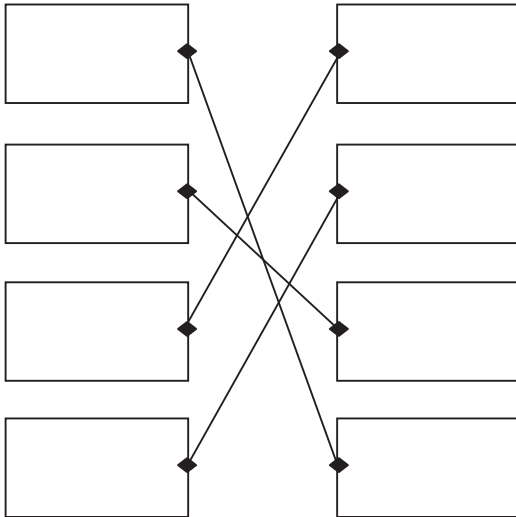
BAHAGIAN A

- 1 B
- 2 A
- 3 A
- 4 B
- 5 C
- 6 B
- 7 A
- 8 A
- 9 A
- 10 C
- 11 C
- 12 A
- 13 D
- 14 B
- 15 A
- 16 B
- 17 C
- 18 A
- 19 C
- 20 B

BAHAGIAN B

- 1 (a) Benar
True
(b) Palsu
False
(c) Palsu
False
(d) Benar
True

2



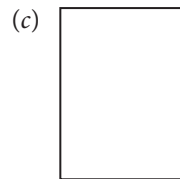
- 3 (a) 30°
(b) 60°
(c) 27°
(d) 23°
- 4 (a) (i) Pembahagi dua sama serenjang
Perpendicular bisector
(ii) Garis selari
Parallel line
(b) (i) Lengkuk
Arc
(ii) Garis lurus
Straight line
- 5 (a) $43^\circ 36'$
(b) 37.4°
(c) $56^\circ 26'$
(d) 25.9°

BAHAGIAN C

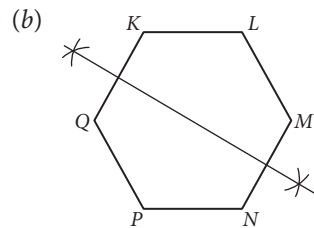
1 (a) $8^{-1} \times \sqrt{144^3}$
 $= \frac{1}{8} \times 144^{\frac{3}{2}}$
 $= \frac{1}{8} \times (12^2)^{\frac{3}{2}}$
 $= \frac{1}{8} \times 12^3$
 $= 216$

(b) Faedah
Interest
 $= \text{RM}7\,500 \times 2.5\% \times 1$
 $= \text{RM}187.50$

Jumlah simpanan
Total savings
 $= \text{RM}7\,500 + \text{RM}187.50$
 $= \text{RM}7\,687.50$



2 (a) $x = 81^\circ$
 $y = 180^\circ - 124^\circ$
 $= 56^\circ$



(c) $2\,000 \left(1 + \frac{x}{12}\right)^{12(5)} = 4\,000$
 $\left(1 + \frac{x}{12}\right)^{12(5)} = 4\,000 \div 2\,000$
 $\left(1 + \frac{x}{12}\right)^{60} = 2$
 $1 + \frac{x}{12} = \sqrt[60]{2}$
 $x = (\sqrt[60]{2} - 1) \times 12$
 $x = 0.1394$

$\therefore$ Kadar faedah tahunan / Rate of annual interest
 $= 0.1394 \times 100$
 $= 13.94\%$

- 3 (a) Luas trapezium
Area of trapezium
 $= \frac{1}{2} \times (0.08 + 0.17) \times 1.4$
 $= 0.175 \text{ m}^2$
 $= 1.75 \times 10^{-1} \text{ m}^2$
- (b) $\sin x = \frac{7}{18}$
 $x = \sin^{-1}\left(\frac{7}{18}\right)$
 $x = 22^\circ 53'$
- (c) Pinjaman
Loan
 $= \text{RM}95\,000 - (95\,000 \times 10\%)$
 $= \text{RM}95\,000 - \text{RM}9\,500$
 $= \text{RM}85\,500$
- Jumlah pembayaran balik
Total repayment
 $= \text{RM}85\,500 + (\text{RM}85\,500 \times 4.5\% \times 5)$
 $= \text{RM}85\,500 + \text{RM}19\,237.50$
 $= \text{RM}104\,737.50$
- Ansuran bulanan
Monthly instalment
 $= \frac{\text{RM}104\,737.50}{5 \times 12}$
 $= \text{RM}1\,745.63$
- 4 (a) Peratus hibah
Percentage of hibah
 $= \frac{\text{RM}25\,425 - \text{RM}25\,000}{\text{RM}25\,000} \times 100\%$
 $= 1.7\%$
- (b) Lukisan berskala : Panjang sebenar
Scale drawing : Actual length
 $= 1 : 200\,000$
- Panjang sebenar
Actual length
 $= \frac{7.5 \times 200\,000}{100\,000}$
 $= 15 \text{ km}$
- Kecerunan, m
Gradient
 $= \frac{12 - (-6)}{4 - 2}$
 $= \frac{18}{2}$
 $= 9$

$$y = mx + c$$

$$12 = (9)(4) + c$$

$$12 = 36 + c$$

$$c = 12 - 36$$

$$c = -24$$

$$y = 9x - 24$$

5 (a) $3x + 4y = 24$
 $4y = -3x + 24$
 $y = -\frac{3}{4}x + \frac{24}{4}$
 $y = -\frac{3}{4}x + 6$

$$\text{Kecerunan} = -\frac{3}{4}$$

Gradient

Pintasan- $y = 6$
y-intercept

(b) $3^x \div 9^{2x-1} = 27^{x+1}$
 $3^x \div 3^{2(2x-1)} = 3^{3(x+1)}$
 $x - 2(2x - 1) = 3(x + 1)$
 $x - 4x + 2 = 3x + 3$
 $x - 4x - 3x = 3 - 2$
 $-6x = 1$
 $x = -\frac{1}{6}$

(c) $\angle POR = 64^\circ \times 2$
 $= 128^\circ$
 $\angle OPQ = 90^\circ$
 $x = 360^\circ - 128^\circ - 90^\circ - 48^\circ$
 $= 94^\circ$

6 (a) (i) 6.458×10^3
(ii) 9.35×10^{-2}
(iii) 1.356×10^1

(b) $\frac{\text{Salinan / Copy}}{\text{Asal / Original}} = \frac{6}{24}$
 $\frac{32}{x} = \frac{24}{6}$
 $x = \frac{32 \times 6}{24}$
 $x = 8 \text{ cm}$

(c) $y + 6 = 0$
 $y = -6 \dots \textcircled{1}$
 $y = -2x + 18 \dots \textcircled{2}$
 $-6 = -2x + 18$
 $-6 - 18 = -2x$
 $-24 = -2x$
 $x = 12$

Titik persilangan (12, -6)
Intersection point (12, -6)