

JAWAPAN

BAB 1 Sudut dan Garis II

1.1 Ciri-ciri Sudut yang Berkaitan dengan Garis Rentas Lintang dan Garis Selari

- 1 (a) (i) AB
 (ii) p dan s , q dan t
 (iii) q dan s
 (iv) q dan r
 (b) (i) AF dan BE
 (ii) a dan c , y dan z
 (iii) b dan d , c dan e , w dan y
 (iv) e dan d , w dan x
- 2 (a) $x = 60$ (Sudut sepadan)
 (b) $x = 60$ (Sudut selang-seli)
 (c) $x = 60$ (Sudut sepadan)
 (d) $x + 60 = 180$
- 3 (a) 72
 (b) 75
 (c) 54
- 4 (a) 132
 (b) 40
 (c) 37
- 5 (a) 52
 (b) 22
 (c) 21
- 6 (a) 38
 (b) 43
 (c) 108
 (d) 85
 (e) 130
- 7 (a) Bukan garis selari
 (b) Garis selari
- 8 (a) 98
 (b) 62
 (c) 117

SUDUT KBAT

- 1 $x = 38^\circ$
 2 $x = 72^\circ$

SUDUT PISA/TIMSS

- 1 D
 2 $x = 45^\circ$

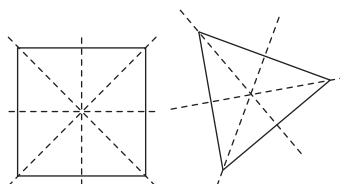
PRAKTIS PT3

- 1 (a) (i) \times
 (ii) \checkmark
 (iii) \times
 (b) PC
 (c) $x = 60^\circ$
- 2 (a) (i) Selari
 (ii) Selari
 (iii) Tidak selari
 (b) $x = 62^\circ$
 (c) 104°
- 3 (a) (i) 72°
 (ii) 50°
 (iii) 72°
 (b) Pernyataan Alif tidak benar
 (c) (i) 64° (ii) 76°

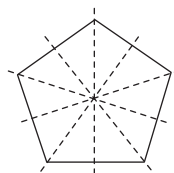
BAB 2 Poligon II

2.1 Poligon Sekata

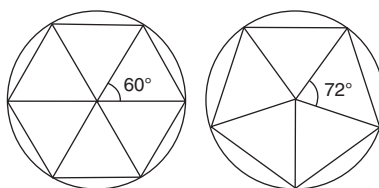
- 1 (a) \times (b) \checkmark
 (c) \checkmark (d) \times
- 2 (a) (b)



(c)



- 3 (a) 4, 4 (b) 5, 5
 (c) 4 (d) 5
- 4 (a) (c)



2.2 Sudut Peluaran dan Sudut Pedalaman

- 1 (a) $x = 84$ (b) $x + y = 112$
- 2 (a) 45° (b) $51\frac{3}{7}^\circ$
- 3 (a) 67 (b) 126
 (c) 95
- 4 (a) 140° (b) 150°
- 5 (a) 900° (b) 1 440°
- 6 (a) 5 (b) 15
- 7 (a) 12 (b) 20
- 8 (a) Jumlah sudut pedalaman = 540°
 (b) Sudut pedalaman sama = 108°
 (c) Sudut peluaran sama = 72°
 (d) Jumlah sudut peluaran = 360°
- 9 (a) $x - y = 30$
 (b) (i) 30 (ii) 168

SUDUT KBAT

- 1 $x = 13$, $y = 40$

SUDUT PISA/TIMSS

- 1 120 cm

PRAKTIS PT3

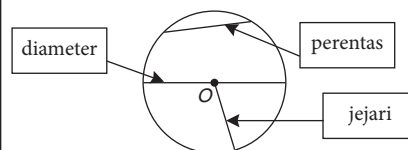
- 1 (a) $x = 134$ (b) $x = 143$

- (c) (i) $x = 45$ (ii) $y = 67.5$
- 2 (a) $x = 62$ (b) $x + y = 334$
 (c) (i) A (ii) $n = 10$
- 3 (a) $x = 96$ (b) $y = 42$
 (c) (i) $x = 112$ (ii) $y = 92$

BAB 3 Bulatan II

3.1 Ciri-ciri Bulatan yang Melibatkan Simetri, Perentas dan Lengkok

1



- 2 (a) (i) 3 cm (ii) 3 cm
 (iii) 1 cm
 (b) 13 cm (c) 12 cm
 (d) 9 cm

3.2 Ciri-ciri Sudut dalam Bulatan

- 1 (a) $x = y = 39$ (b) $x = y = 32$
 (c) $x = 22$
- 2 (a) $x = 57$ (b) $x = 27$
- 3 (a) $x = 15$ (b) $x = 27$
 (c) $x = 18$ (d) $x = 34$

3.3 Sisi Empat Kitaran

- 1 (a) (i) $x = 98$ (ii) $y = 84$
 (b) $x = 38$ (c) $x = 106$
- 2 (a) $x = 54$ (b) $x = 55$
 (c) $x = 116$ (d) $x = 31$

SUDUT KBAT

- 1 (a) $\angle GBC = 119^\circ$ (b) $\angle AGB = 76^\circ$

SUDUT PISA/TIMSS

- 1 120 cm²

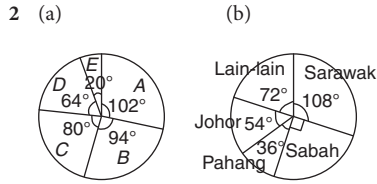
PRAKTIS PT3

- 1 (a) 32 cm
 (b) (i) $x + y = 54$ (ii) $x = 14$
 (c) $x = 50$
- 2 (a) $FG = 12$ cm (b) $w = 34$
 (c) $y = 53$

BAB 4 Statistik II

4.1 Carta Pai

- 1 (a) (i) 75% (ii) $\frac{1}{6}$
 (b) (i) a. 50% b. 35%
 (ii) Johor : 30
 Pahang : 21
 Melaka : 9



- 3 (a) (i) RM120 (ii) RM200
(iii) RM300
(b) (i) $p = 53$
(ii) $124 : 2(53) = 62 : 53$
(iii) 96

4.2 Mod, Median dan Min

- 1 (a) Mod = 14 dan 16
(b) Mod = B
2 (a) Mod = Motosikal
(b) Mod = C dan E
3 (a) 7 (b) 5.5
(c) 19.5
4 (a) 43 (b) 1.5
(c) 14
5 (a) 4.85 (b) 5.20
6 (a) 1.25 (b) 5.7
(c) 53.76
7 (a) 55.25 kg (b) 68.33 kg
(c) 8.75

SUDUT KBAT

- 1 (a) $y = 13$ (b) median = 4
2 Cadangan siasatan:

Pelajar boleh mengambil satu rencana daripada setiap bahagian dalam suatu surat khabar tertentu, iaitu daripada bahagian sukan, berita tempatan, bisnes, dan sebagainya. Bilangan perkataan dalam setiap ayat dikira dan ditentukan puratanya. Graf palang boleh digunakan untuk membandingkan panjang ayat dalam bahagian yang berlainan dalam surat khabar itu.

SUDUT PISA/TIMSS

1

	Min	Mod	Median
Sampel A	7.186	7.23	7.23
Sampel B	7.222	7.26	7.26

Sampel B adalah lebih alkali sebab nilai purata pH adalah lebih besar daripada nilai purata pH bagi sampel A.

PRAKTIS PT3

- 1 (a) (i) D (ii) 18
(iii) RM680
(b) $x = 8$
(c)

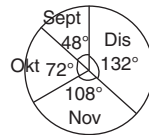
Negeri	Murid	Sudut sektor
Johor	12	$\frac{12}{72} \times 360^\circ = 60^\circ$
Melaka	19	$\frac{19}{72} \times 360^\circ = 95^\circ$

Trengganu	26	$\frac{26}{72} \times 360^\circ = 130^\circ$
Pahang	15	$\frac{15}{72} \times 360^\circ = 75^\circ$
	72	360°



2 (a)

Bulan	Bilangan kereta	Sudut sektor
Dis	66	$\frac{66}{180} \times 360^\circ = 132^\circ$
Nov	54	$\frac{54}{180} \times 360^\circ = 108^\circ$
Okt	36	$\frac{36}{180} \times 360^\circ = 72^\circ$
Sept	24	$\frac{24}{180} \times 360^\circ = 48^\circ$
	180	360°



- (b) (i) C (ii) mod = 0
(c) 64

BAB 5 Indeks

5.1 Indeks

- 1 (a) $(-3) \times (-3)$
(b) $\left(-\frac{1}{2}\right) \times \left(-\frac{1}{2}\right)$
(c) $(-0.63) \times (-0.63) \times (-0.63) \times (-0.63)$
2 (a) $\left(\frac{1}{2}\right)^3 = \left(\frac{1}{2}\right) \times \left(\frac{1}{2}\right) \times \left(\frac{1}{2}\right)$
 $= \frac{1}{8}$
(b) $(-0.2)^3 = (-0.2) \times (-0.2) \times (-0.2)$
 $= -0.008$
(c) $(-2)^3 = (-2) \times (-2) \times (-2)$
 $= -8$
3 (a) 1.3^5 (b) $(-6)^3$
(c) $\left(\frac{3}{2}\right)^4$
4 (a) $81 = 9^2$ (b) $81 = 3^4$
(c) $64 = 4^3$

5.2 Pendaraban Nombor dalam Tatatdana Indeks

- 1 (a) 3^6 (b) $(-2)^5$
(c) 7^6 (d) 2^{12}
(e) $\left(\frac{1}{2}\right)^7$
2 (a) m^7 (b) n^9
(c) k^{12} (d) $3^6 \times 2^3$

- (e) $2^7 \times 3^4$ (f) $2^7 \times 7^3$
(g) $5^9 \times 3^6$
3 (a) h^3k^2 (b) g^2k^7
(c) j^5k^2 (d) u^6w^4
(e) f^8g^5 (f) p^7q^6
(g) $6k^4p^5$ (h) $12m^7w^3$
(i) $-48a^6b^8$ (j) $27p^6q^4$

5.3 Pembahagian Nombor dalam Tatatdana Indeks

5.4 Nombor dan Sebutan Algebra dalam Tatatdana Indeks yang Dikuasakan

- 1 (a) 3^8 (b) 1
(c) $9y^2$ (d) $7m^3$
(e) $7k^6$
2 (a) 3^{10} (b) 5^{24}
(c) u^6 (d) y^{30}
(e) 1
3 (a) $2^5 \times 3^{20} \times 7^{15}$ (b) $2^{3n} \times 3^{4n}$
(c) $a^3 \times b^6$ (d) $9p^8$
(e) $8m^9n^{12}$
4 (a) $\frac{7^{12}}{5^9}$ (b) $\frac{a^6}{b^3}$
(c) $\frac{n^8}{m^6}$ (d) $\frac{27p^{12}}{q^6}$
(e) $\frac{16m^4n^8}{81p^{16}}$

5.5 Indeks Negatif

- 1 (a) $\frac{1}{8}$ (b) $\frac{1}{12}$
(c) $\frac{1}{p}$ (d) $\frac{1}{2^3}$
(e) $\frac{1}{3^2}$ (f) $\frac{1}{4^5}$
(g) $\frac{1}{m^2}$ (h) $\frac{1}{g^4}$
(i) $\frac{1}{p^{12}}$
2 (a) 13^{-2} (b) 5^{-6}
(c) a^{-1} (d) k^{-3}
(e) p^{-12}
3 $3^{-2} \triangleleft_{as} 2^{-3} \triangleleft_{as} m^{-6} \triangleleft_{as} p^{-5}$
 $\frac{1}{3^2}$ (a) $\frac{1}{2^3}$ (b) $\frac{1}{m^6}$ (c) $\frac{1}{p^5}$

5.6 Indeks Pecahan

- 1 (a) $\sqrt{8}$ (b) $\sqrt[3]{4}$
(c) $\sqrt[4]{9}$
2 (a) $16^{\frac{1}{2}}$ (b) $29^{\frac{1}{3}}$
(c) $12^{\frac{1}{4}}$
3 (a) 3 (b) 10
(c) 4 (d) 27
(e) 9 (f) 32
(g) 8

5.7 Pengiraan yang Melibatkan Hukum Indeks

- 1 (a) 36 (b) $\frac{1}{8}$
(c) 4 (d) 9

- (e) 32 (f) $\frac{1}{25}$
 (g) 64 (h) $\frac{1}{81}$
 2 (a) p^2 (b) $16p^{13}q^{10}$
 (c) $48a^7b^{-1}$ (d) $9a^4b^7$
 (e) $3p^{13}q^{-8}$ (f) $8p^{-1}q^{16}$
 (g) $128m^3n^{-1}$ (h) $4a^5b^{-1}$

SUDUT KBAT

1 3 087 2 $x = \frac{1}{2}$

SUDUT PISA/TIMSS

1 $3^n - 3^{n+1} + 3^{n+2} = 3^n - 3^n(3) + 3^n(3^2)$
 $= 1(3^n) - 3(3^n) + 9(3^n)$
 $= 7(3^n)$
 $3^n - 3^{n+1} + 3^{n+2}$ mengandungi faktor 7,
 Maka $3^n - 3^{n+1} + 3^{n+2}$ boleh dibahagi
 dengan 7.

2 $n = \sqrt{2}$
 $m = \left(\frac{2}{\sqrt{2}}\right)^2 = 2$

PRAKTIK PT3

- 1 (a) (i) C (ii) m^{10}
 (b) 48 (c) 2^{10}
 2 (a) (i) D (ii) 5
 (b) (i) $6p^{11}$ (ii) $63e^{8f^7}$
 (c) $\frac{7}{5}$

BAB 6 Ungkapan Algebra III

6.1 Kembangan Ungkapan Algebra

- 1 (a) X (b) ✓
 (c) ✓
 2 (a) $v^2 - 8v + 16$
 (b) $m^2 - 6mn + 9n^2$
 (c) $4b^2 - 12bc + 9c^2$
 3 (a) $w^2 - 9$ (b) $3g^{2-12}$
 (c) $kx^2 - 25k$

6.2 Pemfaktoran Ungkapan Algebra

- 1 (a) $3(4 - h)$ (b) $x(y - 6)$
 (c) $cd(1 + b + e)$
 2 (a) $(2 + u)(2 - u)$
 (b) $5(3 + u)(3 - u)$
 (c) $2(m + 1)(m - 1)$
 3 (a) $(u + 3)^2$ (b) $2(u - 2)^2$
 (c) $7(u - 1)^2$
 4 (a) $3(x + y)$ (b) $m(n + 4)$
 (c) $(3 + n)(3 - n)$
 5 (a) $(u + 1)(u + 3)$
 (b) $(u - 1)(u + 4)$
 (c) $(2u + 1)(u - 1)$
 (d) $(3u - 2)(u - 1)$
 6 (a) $(d + e)(c + 1)$
 (b) $(a + c)(b + 4)$
 (c) $(n - 6p)(m - 1)$
 (d) $(p - 3q)(n - 2)$

6.3 Penambahan dan Penolakan ke atas Pecahan Algebra

- 1 (a) $\frac{4}{u}$ (b) $\frac{4}{x + 4}$
 (c) $\frac{6k - 5}{2k - 1}$

- 2 (a) $\frac{4 - y}{y^2}$ (b) $\frac{3y + 2}{2y^2}$
 (c) $\frac{1 - 3y}{9y}$
 3 (a) $\frac{5u}{12}$ (b) $-\frac{3}{20k}$
 (c) $\frac{2 + n}{mn^2}$ (d) $\frac{n + 4}{6mn}$

6.4 Pendaraban dan Pembahagian ke atas Pecahan Algebra

- 1 (a) $\frac{4hk}{3}$ (b) $\frac{16p}{5u^2}$
 (c) $\frac{2k^2}{3p}$
 2 (a) $8u^2$ (b) $4w$
 (c) $\frac{2}{3p}$
 3 (a) $\frac{p + 1}{2pq}$ (b) $\frac{m - p}{y}$
 (c) $\frac{x - 3}{x + 3}$
 4 (a) $\frac{9}{u}$ (b) $\frac{2}{5p - 5w}$
 (c) $\frac{4t - 12}{t}$
 5 (a) $\frac{3}{y + 2}$ (b) $\frac{4}{m + n}$
 (c) $\frac{p + q}{2}$ (d) $\frac{4}{x - 3}$

SUDUT KBAT

1 $\frac{5 + 3x}{3 + 2x}$ 2 $\frac{1}{a^2 + c^2}$

SUDUT PISA/TIMSS

1 $\frac{3x^2}{2} - x$

PRAKTIK PT3

- 1 (a) (i) D (ii) $\frac{8}{5 - m}$
 (b) (i) $k + 1, k$ (ii) $\frac{3 - 7e}{1 + 6e}$
 (c) $\frac{m + 4n}{16n}$
 2 (a) (i) B (ii) $\frac{k}{8}$
 (b) (i) $(x + y)(m + 1)$ (ii) $5(2 + v)(2 - v)$
 (c) $\frac{4w + 3}{6}$
 3 (a) (i) A (ii) $3k$
 (b) $\frac{k(k - 3)}{5}$ (ii) $9 - 9x$
 (c) $\frac{5b - 24}{6ab}$

BAB 7 Rumus Algebra

7.1 Pemboleh Ubah dan Pemalar

- 1 (a) Pemboleh ubah (b) Pemalar
 (c) Pemboleh ubah (d) Pemalar
 (e) Pemboleh ubah (f) Pemalar

7.2 Rumus

- 1 (a) x (b) e
 (c) A (d) T
 2 (a) $k = h - P$ (b) $u = \frac{A}{2\pi}$
 (c) $x = \frac{k}{4G}$
 3 (a) $x = \frac{3}{y} + 1$ (b) $\sqrt{h^2 - y^2} = x$
 (c) $p^2 - 5 = q$
 4 (a) $m = \frac{8}{v - u}$ (b) $p = \frac{5h}{1 - 2h}$
 (c) $\frac{2b}{1 + b} = a$ (d) $x = \frac{k + T}{T - a}$
 5 (a) $P = 19$ (b) $L = 76$
 (c) $a = 6$ (d) $m = 29$
 6 (a) (i) 62.354 cm²
 (ii) $k = 9.118$ cm
 (b) (i) $A = 2x^2 + \frac{104}{x}$
 (ii) $A = 141$
 (c) $r = 5$

SUDUT KBAT

1 $2\pi x^2 + \frac{70}{x}$

SUDUT PISA/TIMSS

- 1 Air batu sudah hilang 76 tahun dahulu.

PRAKTIK PT3

- 1 (a) (i) D (ii) $P = \frac{N^2 + m^2}{8m^2}$
 (b) $2\pi j^2 + 2\pi j p$
 (c) (i) $g = \frac{7k}{6} + 2$ (ii) $y = \frac{2m}{m - 2}$
 2 (a) (i) B (ii) $y = \frac{(x - w)^2}{2x}$
 (b) $k = \frac{8h}{8 - p}$ (c) $p = \frac{3mn}{4n - 2m}$
 3 (a) (i) B (ii) $k = \frac{3g}{10}$
 (b) $w = \frac{5}{2 + y}$

BAB 8 Pepejal Geometri III

8.1 Isi Padu Prisma Tegak dan Silinder Membulat Tegak

- 1 (a) 56 cm³ (b) 729 cm³
 (c) 2 112 cm³ (d) 1 100 cm³
 (e) 462 cm³
 2 (a) 1 cm (b) 3.5 cm
 (c) 2 cm (d) 6 cm
 (e) 3.5 cm
 3 (a) 100.8 cm³ (b) 8 cm
 (c) 14.5 cm (d) 16 cm²
 (e) 168 cm²
 4 (a) 365 000 mm³ (b) 0.365 m³
 (c) 365 mℓ (d) 3.65 ℓ
 (e) 365 000 cm³
 5 (a) 1 540 cm³ (b) 4 647.5 cm³
 (c) 242 cm³

8.2 Isi Padu Piramid Tegak dan Kon Mbulat Tegak

- 1 (a) $1\,322.8\text{ cm}^3$ (b) 80 m
 (c) 36 cm (d) 20 cm^2
 (e) 40 cm^2
 2 (a) 176 m^3 (b) 28 cm
 (c) 21 cm (d) 12 mm
 (e) 4 cm

8.3 Isi Padu Sfera

- 1 (a) 4.9 cm^3 (b) $2\,483.7\text{ cm}^3$
 2 (a) 12 mm (b) $\frac{4}{3}\text{ m}$
 3 (a) $1\,072\frac{16}{21}\text{ cm}^3$ (b) 4.762 cm

8.4 Isi Padu Pepejal Gubahan

- 1 (a) $1\,150\text{ cm}^3$ (b) 912 cm^3
 (c) $2\,481\frac{1}{3}\text{ cm}^3$

SUDUT KBAT

- 1 $11\frac{11}{48}\text{ cm}^3$

SUDUT PISA/TIMSS

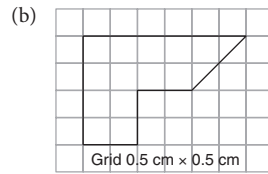
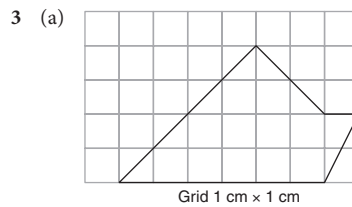
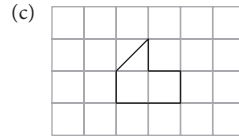
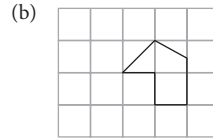
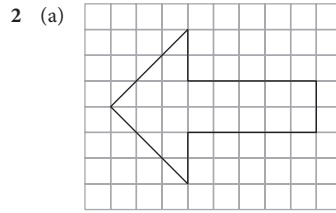
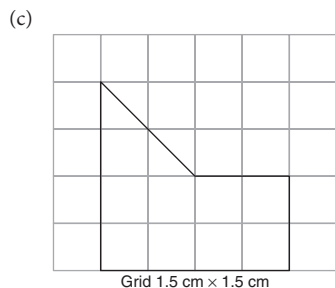
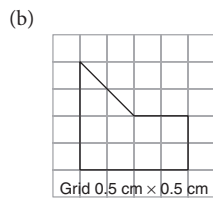
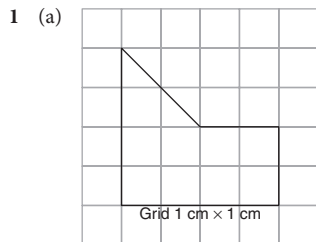
- 1 $179\frac{2}{3}\text{ cm}^3$

PRAKTIS PT3

- 1 (a) (i) B (ii) 100 cm^3
 (b) 864 cm^3 (c) $p = 4$
 2 (a) (i) B (ii) 2 cm
 (b) 30 cm (c) 350π

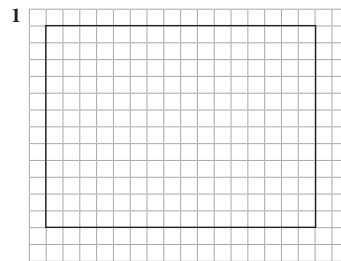
BAB 9 Lukisan Berskala

9.1 Lukisan Berskala



- 4 (a) 6 km (b) 5 km
 (c) 1 : 150 000 (d) 1 : 500

SUDUT KBAT

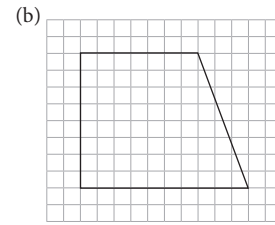
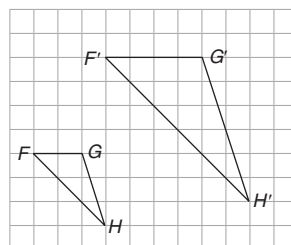


SUDUT PISA/TIMSS

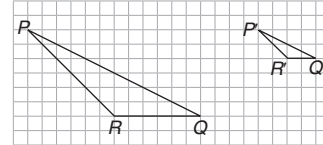
- 1 6 369.6 km

PRAKTIS PT3

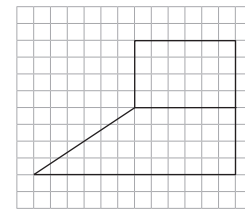
- 1 (a) (i) Skala = 1 : 5
 (ii) 24 m
 (b)



- 2 (a) 1 : 8
 (b)



- (c) 7.5 cm
 3 (a) 1 : 15 000 (b) 6 km
 (c)



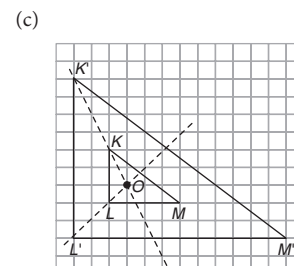
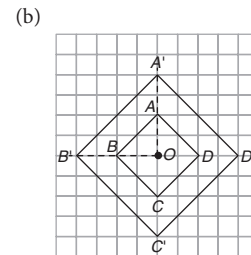
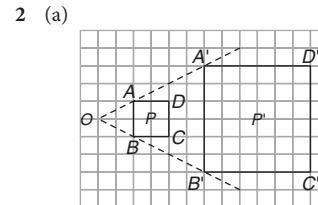
BAB 10 Penjelmaan II

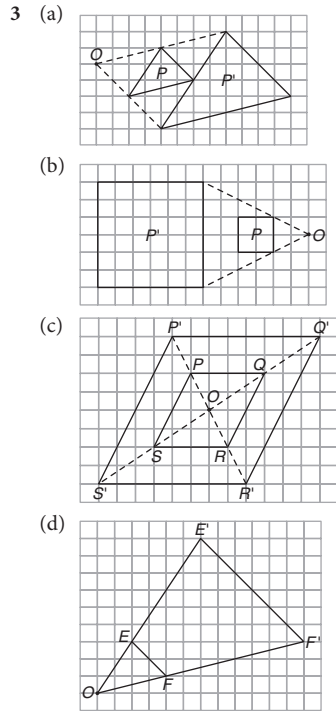
10.1 Keserupaan

- 1 (a) Serupa (b) Tidak serupa
 2 (a) 4 (b) 2
 (c) 8

10.2 Pembesaran

- 1 (a) 2 (b) $\frac{1}{2}$





- 4 (a) (i) 3 (ii) 6 cm
 (b) (i) 2 (ii) 6 cm
- 5 (a) 12 cm² (b) 3 cm²
 (c) 16 cm² (d) 12 cm²
 (e) 2 (f) 4
- 6 (a) 90 cm × 120 cm (b) 23 cm²

SUDUT KBAT

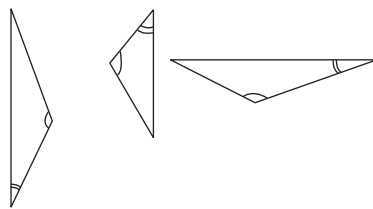
- 1 23 cm²

SUDUT PISA/TIMSS

- 1 151.5 m

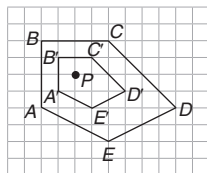
PRAKTIS PT3

- 1 (a) (i)



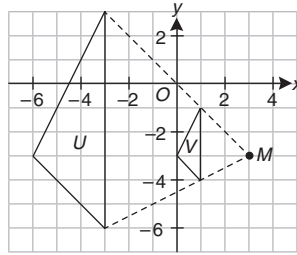
(ii) $PF = 9.6$ cm

(b)

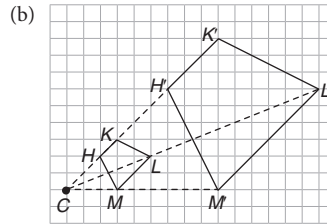


- (c) 27 cm²
 2 (a) (i) A

(ii)



$M(3, -3)$



- (c) 42 unit²

BAB 11 Persamaan Linear II

11.1 Persamaan Linear dalam Dua Pemboleh Ubah

- 1 (a) Ya (b) Bukan
 (c) Ya (d) Ya
 (e) Bukan
- 2 (a) $2p + 3q = 3$ (b) $2x - 5y = 4$
- 3 (a) $y = 5$ (b) $x = -17$
 (c) $x = 3\frac{1}{2}$
- 4 (a) $x = 5$ dan $y = 1$,
 $x = 5\frac{1}{2}$ dan $y = 2$,
 $x = 6$ dan $y = 3$
 (b) $x = -2\frac{1}{2}$ dan $y = 1$,
 $x = -1$ dan $y = 2$,
 $x = \frac{1}{2}$ dan $y = 3$

11.2 Persamaan Linear Serentak dalam Dua Pemboleh Ubah

- 1 (a) $m = -1, n = 1$ (b) $m = 16, n = 3$
 (c) $m = -5, n = 5$
- 2 (a) $m = -2, n = 4$ (b) $w = 10, u = 9$
 (c) $m = 2, n = -3$
- 3 (a) $x = 8, y = 5$ (b) $x = 60, y = 20$
 (c) 48 cm²
 (d) Harga sepeket mi goreng ialah RM1 dan harga sepeket nasi goreng ialah RM1.50.

SUDUT KBAT

- 1 3 buah meja dan 12 buah kerusi
 2 20

SUDUT PISA/TIMSS

- 1 20 km/jam

PRAKTIS PT3

- 1 (a) (i) B
 (ii) $x = 8$
 (b) $m + 2n = 19$ (c) $x = 2, y = -1$

- 2 (a) (i) D (ii) $3p + 8q = 42$
 (b) $p = 4$
 (c) umur Ali ialah 21 tahun umur Dollah ialah 15 tahun
- 3 (a) (i) D (ii) $y = \frac{1}{3}$
 (b) $x = 3$ (c) $3h + k = 270$

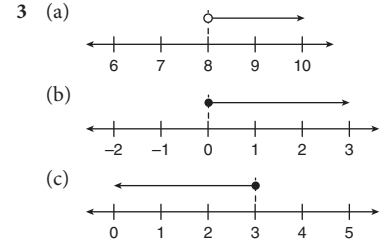
BAB 12 Ketaksamaan Linear

12.1 Ketaksamaan

- 1 (a) $p > 100$ (b) $n \leq 40$
 (c) $x \geq 45$

12.2 Ketaksamaan Linear dalam Satu Pemboleh Ubah

- 1 (a) Ya (b) Bukan
 (c) Bukan (d) Bukan
 (e) Ya
- 2 (a) 10, 11, 12, 13 (b) 14, 13, 12, 11
 (c) 20, 19, 18, 17 (d) -1, -2, -3, -4
 (e) -13, -14, -15, -16



- 4 (a) $x > -3$ (b) $x \geq 5$
 (c) $x \leq -2$
- 5 (a) Jika x mewakili bilangan penumpang dalam lif: $x \leq 8$
 (b) Jika x mewakili usia pemohon, dalam tahun: $x > 30$
 (c) Jika x mewakili bilangan murid: $x \geq 15$

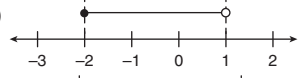
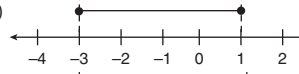
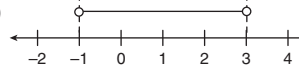
12.3 Pengiraan ke atas Ketaksamaan Linear

- 1 (a) $3 < 10$ (b) $11 > 7$
 (c) $x + 9 < 15$
- 2 (a) $9 > 5$ (b) $-11 < -4$
 (c) $17 > 13$ (d) $x - 4 < 2$
- 3 (a) $-\frac{3}{2} < 1$ (b) $-20 > -30$
 (c) $18 < 24$
- 4 (a) $5 > 4$ (b) $-\frac{3}{2} < 1$
 (c) $-4 < -6$ (d) $-3 > -4$
- 5 (a) $m > 12$ (b) $m + 3 < 15$
 (c) $m - 6 < 6$

12.4 Penyelesaian Ketaksamaan dalam Satu Pemboleh Ubah

- 1 (a) $x \leq 6$ (b) $x > 5$
 (c) $x > 12$ (d) $x \geq -9$
 (e) $x > 18$
- 2 (a) $d > 45$ (b) $d \geq 12$
 (c) $d > -48$ (d) $d \geq 6$
 (e) $m < -5$
- 3 (a) $m < \frac{5}{2}$ (b) $d < \frac{1}{3}$
 (c) $m > 7$ (d) $m < -4$
 (e) $x > 3$

12.5 Ketaksamaan Linear Serentak dalam Satu Pemboleh ubah

- 1 (a) 
 (b) 
 (c) 
- 2 (a) $-4 \leq x < 12$ (b) $-6 \leq x \leq 3$
 (c) $0 < x < 15$
- 3 (a) $-1 \leq x < 3\frac{1}{5}$ (b) $x < \frac{4}{3}$

SUDUT KBAT

- 1 $p - q = 8$ 2 $p + q = 2$

SUDUT PISA/TIMSS

- 1 D 2 B

PRAKTIS PT3

- 1 (a) (i) B (ii) $x < -3$
 (b) $-1 < x < 9$
 (c) $x = -1, 0, 1$
- 2 (a) (i) B (ii) $x > -9$
 (b) Nilai x yang terbesar ialah 2
 (c) Nilai integer: $-5, -4, -3, -2, -1, 0, 1$
- 3 (a) (i) A (ii) $x > 28$
 (b) $-2 \leq x < 4$
 (c) $-2, -1, 0, 1, 2, 3, 4$

BAB 13 Graf Fungsi

13.1 Fungsi

- 1 (a) $A = 3(2p + 2)$ (b) $y = 10x$
 2

	Pemboleh ubah bersandar	Pemboleh ubah tidak bersandar
(a)	T	m
(b)	C	r

- 3 (a) (i) 14 (ii) -1
 (b) (i) 3 (ii) 3
 (c) (i) 68 (ii) -23

13.2 Graf Fungsi

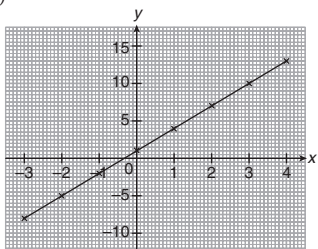
1 (a)

x	-1	0	1	2
y	-2	1	4	7

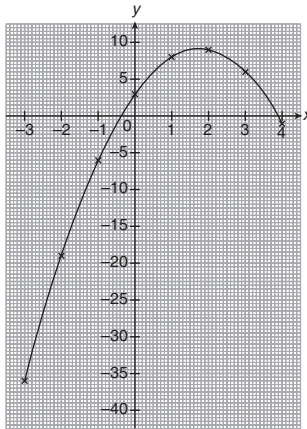
(b)

x	-2	-1	0	1	2
y	9	7	5	3	1

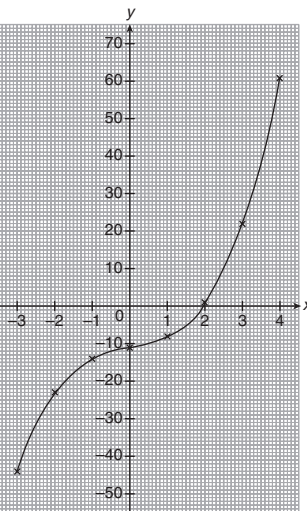
- 2 (a)



- (b)



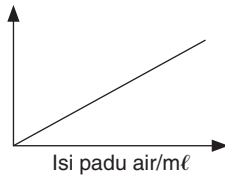
- (c)



- 3 (a) -7.5
 (b) $x = -1.1$ dan 2.6
 4 Cadangan jawapan:

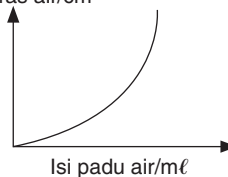
Kadar peningkatan paras air bergantung kepada bentuk bekas. Oleh sebab bekas A mempunyai bentuk yang sekata, paras air akan meningkat secara seragam.

Paras air/cm



Bekas B ialah sebuah kelalang kon dengan lebar yang berbeza-beza. Mula-mula, paras air meningkat pada kadar semakin cepat kerana lebar kelalang itu semakin mengecil. Di bahagian leher kelalang yang sempit, paras air akan naik cepat secara seragam.

Paras air/cm



SUDUT KBAT

- 1 $k = 5$ 2 $m = 3, c = -5$

SUDUT PISA/TIMSS

- 1 B
 2

t	0	1	2	3
h	0	8	8	0

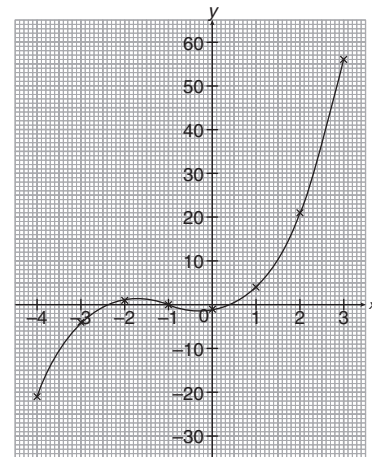
↑
Mula lancar

↑
Tiba semula di permukaan tanah

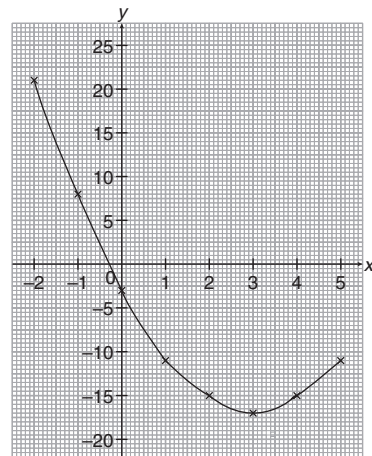
Daripada jadual, objek itu tiba di permukaan tanah pada saat ke-3.

PRAKTIS PT3

- 1 (a) (i) B
 (ii) $m = 7$
 (b) (i) $y = 5$
 (ii) $x = 8$
 (c)



- 2 (a) (i) C
 (ii) a. $y = 7$
 b. $x = \pm 5$
 (b)



BAB 14 Nisbah, Kadar dan Kadaran II

14.1 Kadar

- 1 (a) *Kadar*:
15 buah setiap tahun
Kuantiti:
Bilangan buku dan masa
(b) *Kadar*: RM400 sebulan
Kuantiti: Sewa rumah dan masa
(c) *Kadar*: RM2.40 per kg
Kuantiti: Harga dan jisim
- 2 (a) RM8 per meter
(b) 30 patah perkataan seminit
(c) 2.5 m² per liter
- 3 (a) RM41.40
(b) 4 liter
(c) RM9.60
- 4 (a) 20 m s⁻¹
(b) 64.8 km j⁻¹
(c) RM450 per kg
- 5 (a) Jenama B
(b) 576 Baht

14.2 Laju

- 1 (a) 80 km j⁻¹
(b) 76 km j⁻¹
- 2 (a) 192 km
(b) 320 km
- 3 (a) 5 jam
(b) 7 saat
- 4 (a) $11\frac{2}{3}$ m s⁻¹
(b) 4 000 cm s⁻¹

14.3 Laju Purata

- 1 (a) 90 km j⁻¹
(b) 30 m s⁻¹
- 2 (a) 110 km
(b) 672 m
- 3 (a) 1 jam 36 minit
(b) 4.8 saat
- 4 (a) 30 km j⁻¹
(b) 225 km

14.4 Pecutan

- 1 (a) 5 cm s⁻²
(b) 7 cm s⁻²

SUDUT KBAT

- 1 $\frac{p}{q} = 3$
2 20 m s⁻¹

SUDUT PISA/TIMSS

- 1 B

PRAKTIS PT3

- 1 (a) (i) 24 m s⁻¹
(ii) 126 m
(iii) 5.4 jam
(b) RM22.20
(c) Jam 1316

- 2 (a) (i) 60 km j⁻¹
(ii) 120 km j⁻¹
(iii) 48 km j⁻¹
(b) 96 km j⁻¹
(c) (i) 96 km j⁻²
(ii) $26\frac{2}{3}$ m s⁻²

BAB 15 Trigonometri

15.1 Tangen bagi Sudut Tirus

- 1 (a) $\frac{4}{3}$
(b) $\frac{5}{12}$
- 2 (a) 6 cm
(b) 12 cm

15.2 Sinus bagi Sudut Tirus

- 1 (a) $\frac{12}{13}$
(b) $\frac{5}{13}$
- 2 (a) 16 cm
(b) 35 cm

15.3 Kosinus bagi Sudut Tirus

- 1 (a) $\frac{12}{13}$
(b) $\frac{8}{17}$
- 2 (a) 5 cm
(b) 24 cm

15.4 Nilai Tangen, Sinus dan Kosinus

- 1 (a) $\frac{12}{13}$
(b) $\frac{4}{5}$
- 2 (a) 75° 24'
(b) 22° 3'
- 3 (a)

Sudut θ	30°	60°
sin θ	$\frac{1}{2}$	$\frac{\sqrt{3}}{2}$
kos θ	$\frac{\sqrt{3}}{2}$	$\frac{1}{2}$
tan θ	$\frac{1}{\sqrt{3}}$	$\sqrt{3}$

(b)

sin 45°	kos 45°	tan 45°
$\frac{1}{\sqrt{2}}$	$\frac{1}{\sqrt{2}}$	1

- 4 (a) 0.6214
(b) 0.8722
(c) 0.6946
(d) 3.1178
- 5 (a) 31.43°
(b) 66.32°

- (c) 35.82°
(d) 53.03°
- 6 (a) $\frac{15}{17}$
(b) 28° 4'
(c) (i) 8 cm
(ii) $\frac{4}{5}$

SUDUT KBAT

- 1 66° 52'

SUDUT PISA/TIMSS

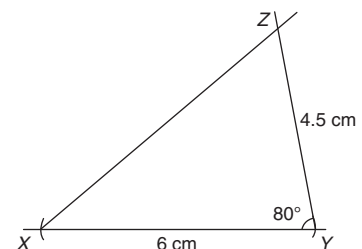
- 1 C

PRAKTIS PT3

- 1 (a) $\sin \theta = \frac{x}{z}$ (X)
 $\tan \theta = \frac{z}{y}$ (✓)
 $\cos \theta = \frac{y}{x}$ (✓)
- (b) (i) 6 cm
(ii) 40° 12'
- (c) (i) $\frac{3}{5}$
(ii) $\frac{3}{4}$
- 2 (a) (i) A
(ii) $\cos \theta = \frac{3}{4}$
- (b) (i) $\frac{4}{5}$
(ii) 26° 23'
- (c) $\frac{5}{2}$
(b) 30 cm

Kertas Model PT3

- 1 (a) X: -0.9, Y: -0.1, Z: 0.7
(b) (i) $42\frac{1}{20}$
(ii) a. Simpanan setiap hari
= (RM140 - RM86) ÷ 3
b. RM126
- (c) (i) 180
(ii) 85%
- 2 (a) (i) x° dan r°
(ii) r° dan y°
(iii) y° dan p°
(b) (i)



- (ii) XZ = 6.8 cm
(c) RM5 000

3 (a) 31, 43, 59

$$\begin{aligned} \text{(b)} \quad \sqrt[3]{1\frac{91}{125}} - 0.8^2 &= \sqrt[3]{\frac{216}{125}} - 0.8^2 \\ &= \frac{\sqrt[3]{216}}{\sqrt[3]{125}} - 0.64 \\ &= \frac{6}{5} - 0.64 \\ &= 0.56 \end{aligned}$$

(c) 1.03 p.m.

- 4 (a) (i) ✓
(ii) ✗
(iii) ✓

(b) $282\frac{6}{7}$

(c) 138 m

- 5 (a) (i) Segi tiga sama kaki
(ii) Segi tiga sama sisi
(iii) Segi tiga bersudut tegak

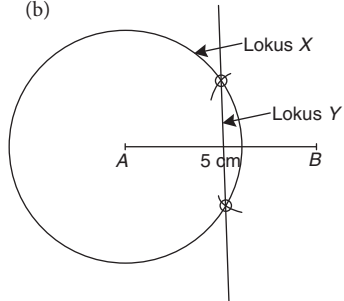
(b) (i) $x = 26, y = 128$

(ii) $x = 82, y = 76$

(c) 2.3 minit

- 6 (a) (i) $y(y + 2) = 63$
(ii) $2(8 \text{ cm} + x \text{ cm}) = 24 \text{ cm}$
(iii) $4p = 56$

(b)



(c) (i) 3

(ii) 1.5 cm

7 (a) (i) 1 : 2

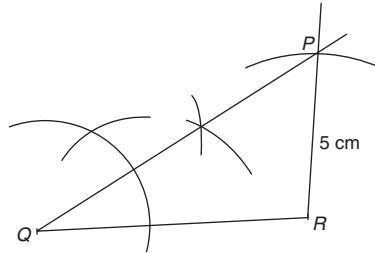
(ii) $1 : \frac{1}{2}$

(iii) $1 : \frac{1}{3}$

(b) (i) $x^{-5} 3$

(ii) $\frac{2}{9}$

(c)



$\angle QPR = 53^\circ$

8 (a) (i) $x > -4$

(ii) $-2 < x \leq 5$

(b) $x = 5, y = -1$

(c) $h = 1, k = 20$ atau $h = 4, k = 9$

9 (a) (i) $9a + 6 = 3(3a + 2)$

(ii) a. $2w(q - 6) = 2qw - 12w$

b. $-3(5 - 2k) = -15 + 6k$

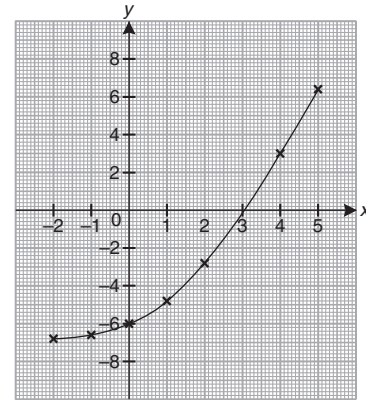
(b) $\frac{3p}{2a}$

(c) $x = \frac{3}{2}$

10 (a) (i) 48 biji bola

(ii) $\otimes \otimes \otimes$

(b)



(c) (i) $\frac{4}{3}$

(ii) 14 cm