

# JAWAPAN

## CHAPTER 1 Rational Numbers

### 1.1 Integers

- 1 (a) +8% (b) -1.5 m  
(c) -5 °C (d) +500 km

- 2 (a) negative (b) less  
(c) zero (d) positive  
(e) more

- 3 (a) -50, -40, 20, 40  
(b) -108, -84, -60, -24

- 4 (a) less (b) less  
(c) more (d) more  
(e) more (f) more  
(g) less (h) more

- 5 (a) -20, -13, -12, -8, 25, 30, 42  
(b) -83, -78, -62, -53, 39, 90, 100  
(c) -135, -132, -102, 99, 120, 168, 172

### 1.2 Basic arithmetic operations involving integers

- 1 (a) -5 (b) 2 (c) 6

- 2 (a) -5 (b) -4 (c) -9  
(d) -4 (e) 6 (f) -50  
(g) -73 (h) 0 (i) -9  
(j) -7 (k) 3

- 3 (a) 5 (b) -6 (c) 4

- 4 (a) -4 (b) 17 (c) -7  
(d) 27 (e) -9 (f) 12  
(g) 8 (h) -1

- 5 (a) -15 (b) -18 (c) 80  
(d) -77 (e) -60 (f) -36  
(g) 30 (h) -24

- 6 (a) -5 (b) 13 (c) 4  
(d) -5 (e) -6 (f) -6  
(g) 17 (h) 13

- 7 (a) -7 (b) 5 (c) -1  
(d) -6 (e) -20 (f) 24  
(g) 14 (h) -20

- 8 (a) -10 (b) 18 (c) -22  
(d) 5 (e) -1 (f) -40  
(g) 14 (h) -15

- 9 (a) 0 (b) 1 (c) 5, 2  
(d) 7, 3 (e) 3, 5 (f) 3  
(g) 7, 3

- 10 (a) 3 018 (b) 36 072 (c) 60  
(d) 450 (e) 79 000

- 11 (a) The altitude decreases by 20 m in a minute.  
(b) The value of the car decreases by RM200 in a year.

- (c) The temperature decreases by 3 °C in a hour.

- (d) 140 m below sea level  
(e) -10 °C  
(f) 3 °C  
(g) 32

### 1.3 Positive and negative fractions

- 1 (a)  $-\frac{4}{5}$ ,  $-\frac{1}{5}$ ,  $\frac{2}{5}$

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

- (c)  $-1\frac{1}{3}$ ,  $-\frac{1}{3}$ ,  $\frac{2}{3}$

- 2 (a)  $-3\frac{2}{7}$ ,  $-2\frac{4}{7}$ ,  $1\frac{5}{7}$ ,  $3\frac{1}{7}$

- (b)  $-3\frac{1}{2}$ ,  $-1$ ,  $-\frac{3}{5}$ ,  $-\frac{2}{5}$

- (c)  $-1\frac{1}{2}$ ,  $-1\frac{1}{8}$ ,  $1\frac{3}{8}$ ,  $1\frac{3}{4}$

- 3 (a)  $-1\frac{7}{8}$  (b)  $\frac{3}{4}$  (c) 40

- (d)  $-\frac{2}{3}$  (e)  $1\frac{1}{6}$  (f)  $5\frac{5}{6}$

- (g)  $7\frac{3}{7}$  (h)  $6\frac{3}{8}$  (i)  $-7\frac{2}{3}$

- (j)  $-7\frac{2}{5}$  (k)  $-2\frac{1}{5}$

- 4 (a)  $1\frac{3}{8}$  km due south of Edi's house

- (b)  $27\frac{1}{2}$  °C

### 1.4 Positive and negative decimals

- 1 (a) -0.75, -0.25, 0.5

- (b) -0.7, 0.1, 0.9

- (c) -0.8, -0.2, 0.4

- 2 (a) -1.25, -1, -0.8, 0.28, 0.5

- (b) -30.5, -10.3, -0.35, -0.015, 3.08

- (c) -20.5, -3.95, -2, -1.5, 5.25

- 3 (a) -15.0 (b) 4.15

- (c) -20.7 (d) -7.54

- (e) 37.5 (f) -5.374

- (g) -8.86 (h) 3.33

- (i) 13.68 (j) -12.125

- (k) -26.226

- 4 (a) Decreases by RM0.56 a day

- (b) 42 points

### 1.5 Rational numbers

- 1 (a) True (b) True

- (c) False (d) False

- 2 (a) -2.75 (b) -0.0625

- (c) 14.0 (d) -2.107

- (e) 9.9

- 3 (a)  $13\frac{1}{2}$  (b)  $-\frac{1}{15}$

- (c)  $\frac{5}{8}$  (d)  $-9\frac{4}{5}$

- (e)  $-3\frac{3}{4}$

- 4 (a) 5.75 litres (b) 15.2 °C

### HOT CORNER

- 1 4 pairs of integers

- 2  $4 - (-1)$  or  $4 + 1 = 5$

- 3 Suggested answers:

- (a)  $3 + 5 - 10 = -2$

- (b)  $4 + 3 + (-9) = -2$

- (c)  $3 \times 2 - 8 = -2$

- (d)  $8 \div 2 - 6 = -2$

- (e)  $\frac{1}{2} \times (-8) + 2 = -2$

- (f)  $1 - 7 \div 2\frac{1}{3} = -2$

- (g)  $3.5 - 0.8 + (-4.7) = -2$

- (h)  $4 - 5 \times 1.2 = -2$

### PISA/TIMSS CORNER

- 1 Cadangan jawapan:  $-3\frac{1}{2}$

- 2 C

- 3 The water rationing is not necessary because the water level has not reached the critical stage.

### PT3 PRACTICE

- 1 (a) P:  $-1\frac{1}{2}$  Q:  $-\frac{1}{2}$  R:  $1\frac{1}{2}$

- (b) (i) -20

- (ii) -2

- (c) 84 m above the earth level

- 2 (a) less than

- (b) more than

- (c) less than

- (d) (i) D

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

- (e) The liquid is not frozen yet because the temperature of the liquid has not reached -5 °C.

- 3 (a) -0.75, -0.25, 0.25

- (b) 6, 8, 16,  $-\frac{9}{10}$

- (c) (i) 51

- (ii) 135

## CHAPTER 2 Factors and Multiples

### 2.1 Factors, Prime Factors and Highest Common Factor (HCF)

- 1 (a) 1, 2, 4, 5, 10 and 20

- (b) 1, 3, 5, 9, 15 and 45

- (c) 1, 2, 3, 6, 9, 18, 27 and 54

- (d) 1, 2, 3, 4, 6, 9, 12, 18 and 36  
 (e) 1, 2, 3, 4, 5, 6, 10, 12, 15, 20, 30 and 60

- 2 (a) 2, 3 and 5  
 (b) 2, 3 and 7

- 3 (a)  $2 \times 2 \times 2 \times 5$   
 (b)  $2 \times 5 \times 7$   
 (c)  $2 \times 2 \times 2 \times 2 \times 2$   
 (d)  $2 \times 3 \times 19$   
 (e)  $3 \times 3 \times 5 \times 5$

- 4 (a) 1, 5 (b) 1, 2, 4, 8  
 (c) 1, 2, 5, 10 (d) 1, 2, 7, 14  
 (e) 1, 5, 25

- 5 (a) 4 (b) 18 (c) 2  
 (d) 9 (e) 21

- 6 (a) 4 (b) 18 (c) 6  
 (d) 15 (e) 12

- 7 (a) 6 (b) 21 (c) 105

**2.2 Multiples, Common Multiples and Lowest Common Multiple (LCM)**

- 1 (a) 14, 28, 42, 56, 70  
 (b) 24, 48, 72, 96  
 (c) 30, 60, 90, 120

- 2 (a) 48 (b) 180 (c) 280  
 (d) 270 (e) 630

- 3 (a) 30 (b) 60 (c) 18  
 (d) 24 (e) 315

- 4 (a) 60 minutes  
 (b) 5 packets of cups, 3 packets of plates  
 (c) 27 Mei

**HOTS CORNER**

- 1 (a) 3 m (b) 13

- 2 363

**PISA/TIMSS CORNER**

- 1 6, 8, 9

- 2 C

- 3 4

**PT3 PRACTICE**

- 1 (a) (i) 3 (ii) 92 (iii) 5  
 (b) (i) 2 (ii) 3 (iii) 6  
 (iv) 36  
 (c) 5, 15, 25 and 75

- 2 (a) (i) ✓ (ii) ✗ (iii) ✓  
 (b) (i) 12 (ii) 36, 72  
 (c) 15, 45 and 75

- 3 (a) 1, 2, 4  
 (b) (i) C (ii) 180  
 (c) 300

**CHAPTER 3 Squares, Square Roots, Cubes and Cube Roots**

**3.1 Squares and Square Roots**

- 1 (a)  $3.5 \times 3.5$  (b)  $-7 \times (-7)$   
 (c)  $\frac{1}{4} \times \frac{1}{4}$  (d)  $11^2$

- (e)  $(-0.13)^2$  (f)  $\left(\frac{3}{5}\right)^2$

- 2 16, 25, 36, 49, 64, 81, 100, 121, 144

- 3 (a) ✓ (b) ✗ (c) ✓  
 (d) ✓ (e) ✓ (f) ✗  
 (g) ✗ (h) ✓

- 4 (a) 49 (b) 100  
 (c) 0.64 (d) 1.44

- (e) 0.09 (f)  $\frac{1}{25}$

- (g)  $\frac{4}{9}$  (h)  $1\frac{9}{16}$

- 5 (a) 83 521 (b) 5 625  
 (c) 0.7225 (d) 4.6656

- (e)  $1\frac{24}{25}$  (f)  $4\frac{33}{64}$

- 6 (a) 25 (b) -11  
 (c)  $\frac{1}{4}$  (d) 9

- (e) 16, 16 (f) 2.38

- 7 (a) 7 (b) 12  
 (c) 20 (d) 0.3

- (e) 0.5 (f)  $\frac{1}{4}$

- (g)  $1\frac{1}{3}$

- 8 (a) 9.055 (b) 8.706  
 (c) 0.762 (d) 1.769

- (e) 0.471 (f) 2.104

- 9 (a)  $4 < 2.605^2 < 9$   
 (b)  $0.0064 < 0.087^2 < 0.0081$   
 (c)  $400 < 23.7^2 < 900$   
 (d)  $81 < 9.002^2 < 100$   
 (e)  $2\,500 < 578^2 < 3\,600$

- 10 (a)  $6 < \sqrt{40} < 7$   
 (b)  $8 < \sqrt{72} < 9$   
 (c)  $0.2 < \sqrt{0.08} < 0.3$   
 (d)  $1.1 < \sqrt{1.36} < 1.2$   
 (e)  $0.05 < \sqrt{0.0035} < 0.06$

- 11 (a) 13 (b) 1.7  
 (c) 6 (d) 10

- (e) 14 (f)  $4\frac{1}{2}$

- (g)  $\frac{3}{10}$  (h)  $\frac{5}{6}$

- 12 (a) 47 610 000 (b) 15 129  
 (c) 0.003 249

- 13 (a) 42.504 (b)  $-\frac{1}{2}$

- (c)  $3\frac{1}{9}$

**3.2 Cubes and Cube Roots**

- 1 (a) 4 (b) 5, 5, 5  
 (c) 4 (d) 2, 2, 2, 2  
 (e) 7 (f) 8, 27, 64

- 2 (a) 125 (b) 0.027  
 (c) 0.000 008 (d)  $-\frac{1}{64}$

- (e)  $3\frac{3}{8}$

- 3 (a) 2.52 (b) 0.42  
 (c) 2 097.15 (d) -79.51  
 (e) -0.08 (f) 10.65

- 4 (a) 4 (b) -3  
 (c) 8 (d)  $2\frac{1}{2}$

- (e) 0.1

- 5 (a) 3.271 (b) -2.621  
 (c) 0.658 (d) -1.189  
 (e) 0.894 (f) 1.375

- 6 (a)  $0.343 < 0.72^3 < 0.512$   
 (b)  $1.728 < 1.25^3 < 2.197$

- 7 (a)  $3 < \sqrt[3]{45} < 4$   
 (b)  $0.6 < \sqrt[3]{0.3} < 0.7$

- 8 (a)  $12\frac{19}{27} \text{ cm}^3$  (b)  $0.063 \text{ m}^3$   
 (c) 398 g

- 9 (a)  $1\frac{1}{2} \text{ cm}$  (b)  $4\,913 \text{ cm}^3$

- 10 (a) 0.31 (b) -195

- (c)  $-\frac{1}{4}$  (d)  $\frac{3}{20}$

- (e)  $\frac{3}{4}$

**HOTS CORNER**

- 1 (a) RM1 620  
 (b) The trees can be arranged in 18 rows such that 18 lemon kumquat are in a row.

**PISA/TIMSS CORNER**

- 1 D  
 2 (a) 3.5 cm (b) 294 cm<sup>2</sup>

**PT3 PRACTICE**

- 1 (a) (i) False (ii) False  
 (iii) True

- (b) (i) 7 (ii)  $\frac{4}{5}$

- (c)  $6\frac{1}{4} \text{ cm}^2$

- 2 (a) (i) 0.7 (ii) -2  
 (iii) -8

- (b) (i) B (ii) 3.2  
 (c)  $11\,250 \text{ cm}^3$

- 3 (a) 25, 36, 49  
 (b) 27, 3,  $\frac{1}{4}$ ,  $1\frac{1}{4}$   
 (c) 11.6 cm

## CHAPTER 4 Ratios, Rates and Proportions

### 4.1 Ratios

- 1 (a) 70 : 37 : 110 (b) 7 : 100 : 80  
(c) 60 : 23 : 30

- 2 (a) ✓ (b) ✗ (c) ✓  
(d) ✓ (e) ✓ (f) ✗  
(g) ✓

- 3 (a) 2 : 9 (b) 4 : 7  
(c) 13 : 11 (d) 22 : 7  
(e) 4 : 3 (f) 24 : 25  
(g) 12 : 5 (h) 3 : 10 : 7  
(i) 5 : 4 : 16 (j) 9 : 28 : 6  
(k) 20 : 6 : 25

### 4.2 Rates

- 1 (a) 15 books a year  
Number of books and time  
(b) 50 km per hour  
Distance and time  
(c) 1 025 kg per m<sup>3</sup>;  
Mass and volume of water

- 2 (a) RM8 per m  
(b) 30 words a minute  
(c) RM24 an hour  
(d) 0.4 litre per m<sup>2</sup>  
(e) 3 m/s<sup>2</sup>

- 3 (a) 20 m/s  
(b) 64.8 kmh<sup>-1</sup>  
(c) RM450 per kg

### 4.3 Proportions

- 1 (a) 30 (b) 18 (c) 4

- 2 (a) RM96 (b) 625 g

- 3 (a) 7 (b) 16.8 kg (c) RM135

### 4.4 Ratios, Rates and Proportions

- 1 (a) 5 : 2 : 7 (b) 7 : 8 : 12  
(c) 15 : 10 : 4

- 2 (a) 4, 2 : 7, 9 : 2, 7 : 5  
(b) 18, 4 : 9, 13 : 4, 9 : 5

- 3 (a) 28, 12 (b) 16, 20  
(c) 42, 49

- 4 (a) RM435 (b) 175 km  
(c) Can/Yes

- 5 (a) RM2 800 (b) 30  
(c) 35 (d) RM34  
(e) Not necessary

### 4.5 Relationship between Ratios, Rates and Proportions, with Percentages, Fractions and Decimals

- 1 (a) 6 (b) 3.6  
(c) RM1.60 (d) 200 cm  
(e) 0.9 kg

- 2 (a) 120 (b)  $\frac{7}{12}$   
(c) 55% (d) RM150

### HOTS CORNER

- 1 (a) 5 : 1 (b) 1 : 5

### PISA/TIMSS CORNER

- 1 2 : 3

- 2 16

- 3 (i) Yes (ii) No (iii) No

### PT3 PRACTICE

- 1 (a) (i) 8 : 20 (ii) 6 : 9  
(iii) 3 : 9  
(b) (i) 15 (ii) 9 : 6 : 5  
(c) 58

- 2 (a) (i) 5 : 8 (ii) 5 : 13  
(iii) 8 : 3  
(b) (i) C (ii) 25  
(c) (i) RM168 000  
(ii) RM18 000

- 3 (a)  $\frac{2}{3} : 1\frac{2}{3}, 16 : 40, \frac{2}{5} : 1$   
(b) (i) 5 : 6 (ii) 5 : 11  
(c) 6.25 hours

## CHAPTER 5 Algebraic Expressions

### 5.1 Variable and Algebraic Expressions

- 1 (a)  $N$  students took part in the drawing competition, a changing value.  
(b) Farah bought  $y$  kilogram of chicken from the market, a changing value.  
(c) The water boils when the thermometer shows a temperature of  $t$  °C, a fixed value.

- 2 (a)  $x - 36$  (b)  $\frac{n}{4}$  (c)  $3p$

- 3 (a)  $w - 11$  (b)  $4x$  (c)  $\frac{32}{n}$   
(d)  $5 + 2k$  (e)  $\frac{3}{4m}$

- 4 (a) 21 (b) -10 (c) -1  
(d) 110 (e) 4

- 5 (a) 1 (b) 2 (c) 1  
(d) 3 (e) 1 (f) 4

- 6 (a) 2 (b)  $x, y$  (c)  $5, y$   
(d) 30 (e) 3 (f) 6

- 7 (a) ✓ (b) ✗ (c) ✗  
(d) ✓ (e) ✗ (f) ✓

### 5.2 Algebraic Expressions Involving Basic Arithmetic Operations

- 1 (a)  $5x + 3$  (b)  $13 - 5m$   
(c)  $3m - 2k$  (d)  $6p - 5$   
(e)  $5h - 5k$  (f)  $-4d + 5$   
(g)  $6hk - 3h + 4k$  (h)  $10ab - 8a - 3$

- 2 (a)  $40m$  (b)  $9pq$   
(c)  $9k^2$  (d)  $35h^2k$   
(e)  $4n^3$

- 3 (a)  $\frac{3m}{4}$  (b)  $\frac{n}{4}$   
(c)  $\frac{5c}{2}$  (d)  $\frac{1}{3k^2}$   
(d)  $2u$

- 4 (a)  $(5x + 21)$  years  
(b)  $(80x + 60y)$  sen  
(c) (i)  $RM(16x + 4)$   
(ii)  $RM(8x - 11)$   
(iii)  $RM(32x - 5)$

### HOTS CORNER

- 1 2 terms

- 2 Unlike

- 3 2 possible answers:  
 $5x + 4y - 3x - 2y = 2x + 2y$   
 $4x + 5y - 2x - 3y = 2x + 2y$

### PISA/TIMSS CORNER

- 1 C 2 B 3 C 4 C

### PT3 PRACTICE

- 1 (a) (i)  $m$  (ii)  $-2y$  (iii)  $4m$   
(b) (i) D (ii)  $4p + 4q$   
(c)  $(8x + 6y)m$

- 2 (a)  $7m - n^2, 0.8 - hk, 12x + 3y$   
(b) (i)  $12a^2bc$  (ii)  $2m^3n$   
(c)  $RM(20t + 50)$

- 3 (a) (i) 3 (ii) 1 (iii) 2  
(b) (i)  $5a + 9$  (ii)  $-4p + 4q$   
(c)  $25x + 20y$

## CHAPTER 6 Linear Equations

### 6.1 Linear Equations in One Variable

- 1 (a)  $5p + q = 12$  (d)  $8x^2 + x = 10$   
(b)  $1.8u = 5v$  (e)  $9hk + 8 = 0$   
(c)  $\frac{1}{2}x = 6 - x$  (f)  $\frac{1}{x} = 3x$

- 2 (a) No (b) Yes  
(c) Yes (d) Yes  
(e) No (f) No

- 3 (a)  $x + 11 = 18$  (b)  $8x + 5 = 29$   
(c)  $300 - x = 50$

- 4 (a) When 7 is subtracted from 4 times a number, the result is 5.  
(b) When  $x$  is divided by 5, the result is 12.  
(c) Three times the sum of  $x$  and 8 is 15.

- 5 (a)  $x = 4$  (b)  $x = -3$

- 6 (a)  $x = 15$  (b)  $y = -8$   
(c)  $p = 4$  (d)  $n = -3$   
(e)  $x = \frac{1}{2}$

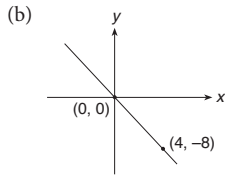
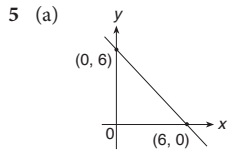
- 7 (a)  $x = 9$  (b)  $x = -4\frac{1}{2}$   
 (c)  $w = 10$
- 8 (a)  $x = -3$  (b)  $x = 2$   
 (c)  $x = -9$  (d)  $m = 5$   
 (e)  $x = -12$
- 9 (a)  $-3$  (b)  $27$   
 (c)  $9$

### 6.2 Linear Equations in Two Variables

- 1 (a), (c), (e)
- 2 (a)  $x + y = 56$  (b)  $h = k - 15$   
 (c)  $m - n = 3$  (d)  $2p + 2q = 28$

- 3 *Suggested answer:*  
 (a) The number  $m$  is 7 less than the number  $n$ .  
 (b) The number  $p$  is five times the number  $q$ .  
 (c) The sum of  $a$  and two times  $b$  is 18.

- 4 (a)  $m = 1, n = 2; m = 3, n = -2$   
 (b)  $x = 1, n = -1\frac{1}{2}; x = 2, y = 0$



### 6.3 Simultaneous Linear Equations in Two Variables

- 1 (a)  $x = 2, y = 3$  (b)  $x = 1, y = -3$
- 2 (a)  $m = 3, n = -2$  (b)  $p = 2, q = \frac{1}{2}$
- 3 (a)  $a = -2, b = 2$  (b)  $u = 5, v = 2$
- 4 (a) 45 and 63  
 (b) Mr Li is 40 years old and his son is 10 years old.

### HOTS CORNER

- 1 43 cm
- 2 (a)  $1\frac{2}{3}$  hours (b) 4 hours  
 (c) Johari's money is not enough for both the activities.

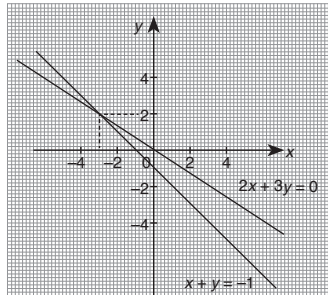
### PISA/TIMSS CORNER

- 1 C 2 C 3 250

### PT3 PRACTICE

- 1 (a) (i) ✓ (ii) ✗ (iii) ✗  
 (b) (i) B

- (ii) a.  $x = 4$  b.  $x = 5$   
 (c) 8
- 2 (a) (i) Yes (ii) No (iii) Yes  
 (b)  $x = 2, y = 5$   
 (c) (i)  $10x + 10$  (ii)  $x = 3$
- 3 (a) (i) Yes (ii) No (iii) Yes  
 (b)  $m = 6$   
 (c) (i)



- (ii)  $x = -3, y = 2$

## CHAPTER 7 Linear Inequalities

### 7.1 Inequalities

- 1 (a)  $<$  (b)  $>$  (c)  $>$   
 (d)  $<$  (e)  $>$  (f)  $>$   
 (g)  $>$  (h)  $>$
- 2 (a)  $x < 10$  (b)  $n \leq 15$   
 (c)  $x \geq 45$  (d)  $m > 50$
- 3 (a)  $x > -3$  (b)  $y \geq 5$   
 (c)  $k \leq -2$
- 4 (a)  $<$  (b)  $<$  (c)  $<$   
 (d)  $>$  (e)  $>$  (f)  $>$

### 7.2 Linear Inequalities in One Unknown

- 1 (a)  $x + 12 \leq 45$  (b)  $18 + p > 30$   
 (c)  $3n \leq 10$
- 2 (a)  $x > 6$  (b)  $x > -5$   
 (c)  $x > 12$  (d)  $x < -9$   
 (e)  $x > 18$
- 3 (a)  $d < -45$  (b)  $p < -12$   
 (c)  $h < 28$  (d)  $x \geq 6$   
 (e)  $m \geq -5$
- 4 (a)  $m < -4$  (b)  $x \geq 9$   
 (c)  $u < 12$  (d)  $a < 2$   
 (e)  $x \geq -2$
- 5 (a)  $x > 6$  (b)  $x \leq 1\frac{1}{3}$   
 (c)  $x < -2$  atau  $x \geq 6$  (d)  $-3 \leq x < 4$

### HOTS CORNER

- 1 9, 10, 11 dan 12
- 2 10
- 3 11 months

### PISA/TIMSS CORNER

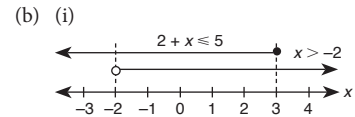
- 1 C 2  $x > 2$  3 8

### PT3 PRACTICE

- 1 (a) (i) Yes (ii) No (iii) No  
 (b) 10, 9,  $3x, -3$   
 (c)  $2 < m < 4$

- 2 (a) (i)  $x < -1$   
 (ii)  $x \geq -2$   
 (iii)  $x \leq -1$   
 (b) (i) D  
 (ii) a.  $x > -3$  b.  $x \leq 7$   
 (c) 5

- 3 (a)  $0, \frac{1}{4}, -3$

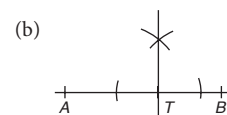
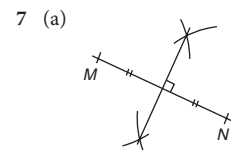
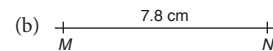
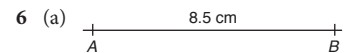


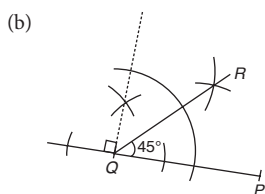
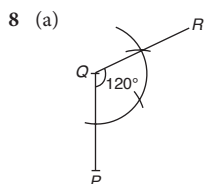
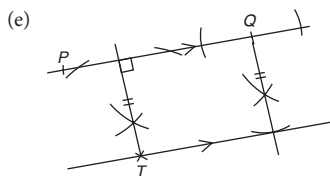
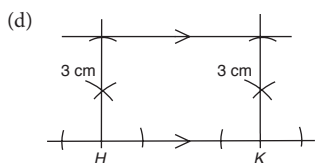
- (ii)  $-2 < x \leq 3$   
 (c) (i)  $3x < 1\ 000$  (ii) 333

## CHAPTER 8 Lines and Angles

### 8.1 Lines and Angles

- 1 (a) 5.3 cm (b) 3.5 cm  
 (c) 6.5 cm (d) 11.8 cm
- 2 (a)  $80^\circ; 75^\circ$  (b)  $130^\circ; 128^\circ$   
 (c)  $280^\circ; 282^\circ$
- 3 (a)  $180^\circ$   
 (b)  $> 180^\circ$   
 (c)  $360^\circ$   
 (d) Angles on a straight line  
 (e) Reflex angle  
 (f) Angle of one whole turn
- 4 (a)  $18^\circ$  (b)  $132^\circ$  (c)  $73^\circ$   
 (d)  $250^\circ$  (e)  $304^\circ$
- 5 (a)  $45^\circ$  (b)  $113^\circ$  (c)  $72^\circ$



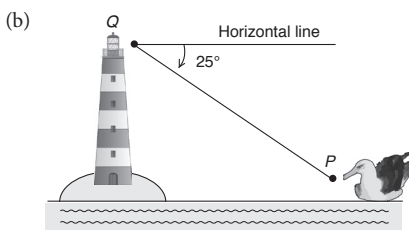
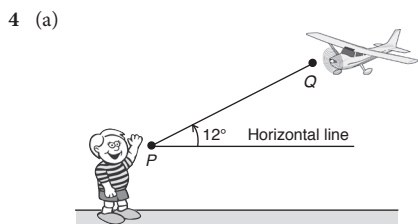


### 8.2 Angles Related to Intersecting Lines

- 1 (a)  $39^\circ$  (b)  $76^\circ$  (c)  $41^\circ$   
 (d)  $43^\circ$  (e)  $104^\circ$  (f)  $35^\circ$   
 (g)  $29^\circ$
- 2 (a)  $x = 48^\circ, y = 48^\circ, z = 42^\circ$   
 (b)  $x = 126^\circ, y = 26^\circ, z = 26^\circ$

### 8.3 Angles Related to Parallel Lines and Transversals

- 1 (a)  $EF$   
 (b)  $\angle k$  and  $\angle w, \angle j$  and  $\angle x, \angle m$  and  $\angle y, \angle n$  and  $\angle z$   
 (c)  $\angle j$  and  $\angle z, \angle m$  and  $\angle w$   
 (d)  $\angle j$  and  $\angle w, \angle m$  and  $\angle z$
- 2 (a) Not parallel (b) Parallel  
 (c) Parallel
- 3 (a)  $70^\circ$  (b)  $61^\circ$  (c)  $70^\circ$   
 (d)  $20^\circ$  (e)  $140^\circ$  (f)  $22^\circ$   
 (g)  $48^\circ$  (h)  $45^\circ$  (i)  $35^\circ$   
 (j)  $40^\circ$  (k)  $110^\circ$



- 5 (a)  $m = 160^\circ, n = 160^\circ$   
 (b)  $x = 110^\circ$   
 (c)  $a = 45^\circ, b = 45^\circ, c = 70^\circ$   
 (d)  $p = 80^\circ, q = 110^\circ, r = 100^\circ$

### HOTS CORNER

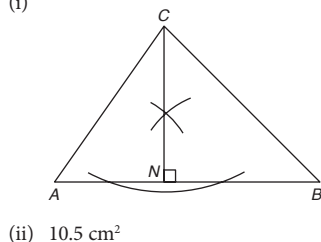
- 1  $x = 40^\circ, y = 50^\circ$   
 2  $OD$

### PISA/TIMSS CORNER

- 1 B 2  $60^\circ$  3 D

### PT3 PRACTICE

- 1 (a) (i)  $\angle b$  and  $\angle f$   
 (ii)  $\angle a$  and  $\angle g$   
 (iii)  $\angle c$  and  $\angle d$   
 (b) (i) C  
 (ii)  $x = 48^\circ, y = 100^\circ, z = 308^\circ$   
 (c) (i) True  
 (ii) True  
 (iii) False
- 2 (a)  $45^\circ, 75^\circ, 120^\circ$   
 (b) (i)  $\angle 4$  (ii)  $55^\circ$   
 (c) (i)



## CHAPTER 9 Basic Polygons

### 9.1 Polygons

- 1 (a) 3, 3, 0 (b) 4, 4, 2  
 (c) 5, 5, 5 (d) 7, 7, 14

### 9.2 Triangles

1

A	-	-
D	B	G
F	E	C

- 2 (a) 54 (b) 20 (c) 55  
 (d) 120 (e) 50
- 3 (a) 20 (b) 30

### 9.3 Quadrilaterals

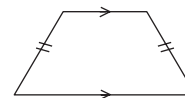
- 1 (a) Rectangles; 2  
 (b) Rhombus; 2  
 (c) Trapezium; 0

- (d) Parallelogram; 0  
 (e) Trapezium; 0

- 2 (a) 50 (b) 60  
 3 (a) 40 (b) 110  
 4 (a) 15 (b) 60  
 (c) 70 (d) 15  
 (e) 25 (f) 40
- 5 (a) 15 (b) 70

### HOTS CORNER

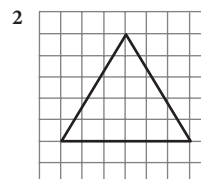
- 1 Isosceles trapezium



- 2 Five

### PISA/TIMSS CORNER

- 1 B



- 3 B

### PT3 PRACTICE

- 1 (a) (i) Has three axes of symmetry  
 (ii) Has one axis of symmetry  
 (iii) No axis of symmetry  
 (b) (i) B (ii) 44  
 (c) 170
- 2 (a) (i), (iv) and (v)  
 (b) (i) Shape 3 (ii) 50  
 (c)  $106^\circ$

## CHAPTER 10 Perimeter and Area

### 10.1 Perimeter

- 1 (a) 60 cm (b) 28 cm  
 (c) 48 cm (d) 26 cm
- 2 (a) 15.6 cm (ii) 12.3 cm
- 3 (a) 42 cm (b) 42 cm  
 (c) 12.65 cm

### 10.2 Area of Triangles, Parallelograms, Kites and Trapeziums

- 1 (a) 22 (b) 30 (c) 24
- 2 (a)  $18 \text{ cm}^2$  (b)  $21 \text{ cm}^2$   
 (c)  $30 \text{ cm}^2$  (d)  $216 \text{ mm}^2$   
 (e)  $56 \text{ cm}^2$  (f)  $63 \text{ cm}^2$   
 (g)  $67\frac{1}{2} \text{ cm}^2$  (h)  $48 \text{ cm}^2$   
 (i)  $92 \text{ cm}^2$  (j)  $430 \text{ mm}^2$   
 (k)  $102 \text{ cm}^2$

- 3 (a) 9 mm (b) 12 cm  
 (c) 12 cm (d) 7 cm  
 (e) 12 cm
- 4 (a) 40 cm<sup>2</sup> (b) 50 cm<sup>2</sup>  
 (c) 90 cm<sup>2</sup> (d) 14 cm

**10.3 Relationship between Perimeter and Area**

- 1 (a) 100 cm<sup>2</sup> (b) 240 cm<sup>2</sup>  
 (c) 50 cm<sup>2</sup>

**HOTS CORNER**

- 1 The farm with the largest area measures 4 m by 4 m.  
 2 About 16 000 people

**PISA/TIMSS CORNER**

- 1 (a) Yes (b) Yes  
 (c) No (d) Yes

2 C

3 40 cm<sup>2</sup>

**PT3 PRACTICE**

- 1 (a) (i), (ii) and (iv)  
 (b) (i) C (ii) 75 packets  
 (c) 100 cm<sup>2</sup>
- 2 (a) (i) 36 cm (ii) 27 cm  
 (iii) 30 cm  
 (b) 60 cm<sup>2</sup>  
 (c) 80 cm<sup>2</sup>

**CHAPTER 11 Introduction of Set**

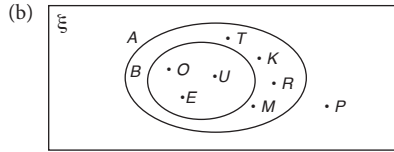
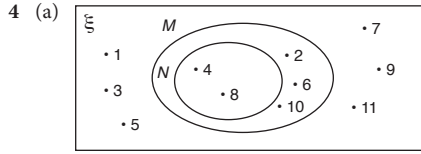
**11.1 Set**

- 1 (a) {April, Jun, September, November}  
 (b) {0, 1, 2, 3, 4, 5, 6, 7, 8, 9}  
 (c) {B, E, R, J, A, Y}
- 2 (a) {8, 16, 24, 32, 40, ...}  
 (b) {-2, -1, 0, 1, 2}  
 (c) {28, 29, 30, 31}
- 3 (a) ✓ (b) ✓ (c) ✓  
 (d) ✗ (e) ✗
- 4 (a) ∈ (b) ∉ (c) ∈  
 (d) ∉ (e) ∈ (f) ∈
- 5 (a) 6 (b) 26 (c) 5  
 (d) 4 (e) 8 (f) 12
- 6 (a) A = H (b) B = G  
 (c) C = J (d) D = K

**11.2 Venn Diagrams, Universal Sets, Complement of a Set and Subset**

- 1 (a)  $B = \{12, 16, 20\}$   
 $B' = \{11, 13, 14, 15, 17, 18, 19\}$   
 (b)  $C = \{A, J, R\}$   
 $C' = \{P, E, L, N\}$   
 (c)  $D = \{3, 5, 7, 11, 13\}$   
 $D' = \{0, 1, 2, 4, 6, 8, 9, 10, 12, 14\}$
- 2 (a)  $H' = \{1, 5, 7, 11, 13, 15, 17, 19\}$   
 (b)  $K' = \{-2, -3, -4\}$

- 3 (a)  $\emptyset, \{9\}$   
 (b)  $\emptyset, \{a\}, \{b\}, \{a, b\}$   
 (c)  $\emptyset, \{2\}, \{4\}, \{6\}, \{2, 4\}, \{2, 6\}, \{4, 6\}, \{2, 4, 6\}$



**HOTS CORNER**

- 1 (a) 20 (b) 8 (c) 16  
 (d) 12 (e) 36

**PISA/TIMSS CORNER**

- 1 D
- 2 (i)  $H = \{11, 13, 15, 17, 19\}$   
 (ii)  $H = \{\text{nombor ganjil antara 10 and 20}\}$   
 (iii)  $H = \{x: 10 < x < 20, x = \text{nombor ganjil}\}$

**PT3 PRACTICE**

- 1 (a) (i) ✗ (ii) ✓ (iii) ✗  
 (b) (i) C  
 (ii) a. 1  
 b. 2  
 c. 8  
 (c) (i)  $\{p, q, r, s, t\}$   
 (ii) 2  
 (iii)  $\{q, s, t\}$
- 2 (a) (i) False (ii) False  
 (iii) True  
 (b) (i)  $\{6, 12, 18, 24, 30, 36, 42, 48\}$   
 (ii)  $\{12, 24, 36, 48\}$   
 (iii)  $\{6, 18, 30, 42\}$   
 (iv) Set K = set H
- (c)

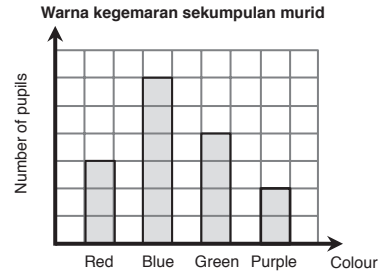
**CHAPTER 12 Data Handling**

**12.1 Data**

- 1 ② Collect data  
 ③ Organise and represent data  
 ④ Analyse data  
 ⑤ Interpret and make conclusion  
 ⑥ Communicating the results
- 2 Suggested answer:  
 (a) The favourite colours of students  
 (b) Number of packets of nasi lemak sold  
 (c) The mass of postal parcel sent

3 (a)

Colour	Tally	Frequency
Red	///	3
Blue	//// /	6
Green	////	4
Purple	//	2

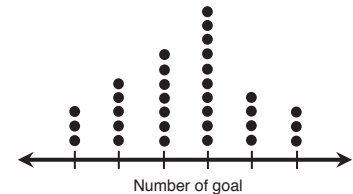


The bar chart enable category of data, i.e. the favourite colours, to be compared easily.

(b)

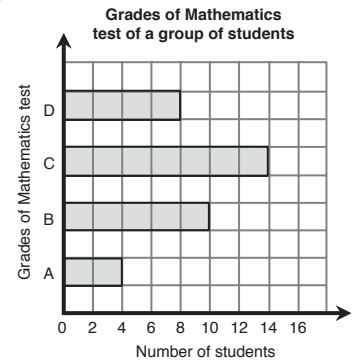
Number of goal	Tally	Frequency
0	///	3
1	////	5
2	//// //	7
3	//// ///	10
4	////	4
5	///	3

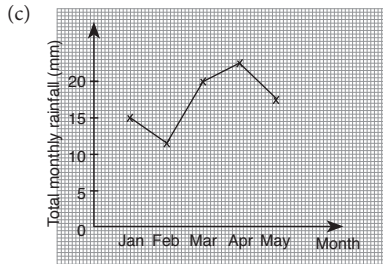
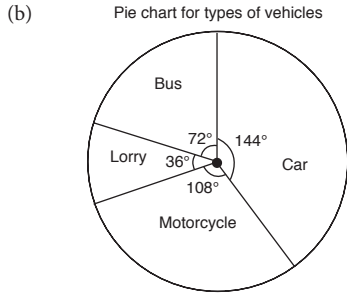
Bilangan gol dijangkan dalam setiap perlawanan



Dot plot represents each data clearly. The distribution of the data is clearly shown and the extent of dispersion.

4 (a)





(d)

Stem	Leaf
5	6 8 9
6	5 6 6 7 8 9
7	0 1 2 4 5 6 6 7 8 9
8	0 0 1 2 3 3 5 8
9	0 1 2 3 4

Key: 5 | 6 means 56

- 5 (a) 2.73  
 (b) 60%  
 (c) From the sales trend in the last four years, the sales in 2016 will increase by 2500 to 25 000.  
 (d)  $\frac{7}{10}$

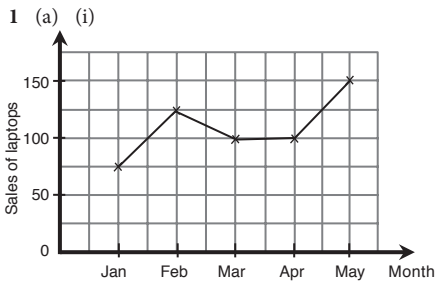
**HOTS CORNER**

- 1 (a) The vertical axis on the bar chart does not start from “zero” but is starts with “300”. Then, this bar chart is rather confusing because the actual weight of each bar is not shown. Hence, the student’s statement is not accurate.  
 (b)  $2\frac{2}{3}$  %

**PISA/TIMSS CORNER**

1 D 2 2008

**PT3 PRACTICE**



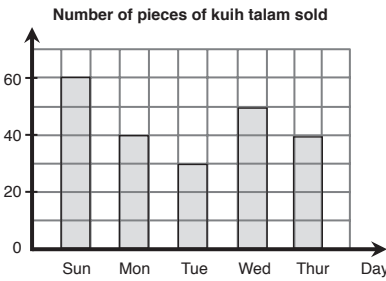
(ii) March and April

(b) (i)

Score	Frequency
0	9
1	11
2	6
3	4

- (ii) Score ‘1’  
 (c) 600 girls

2 (a) (i)



- (ii) Sunday  
 (b) RM330  
 (c) 65%

**CHAPTER 13 Pythagoras’ Theorem**

**13.1 Pythagoras’ Theorem**

- 1 (a)  $\angle R$  (b)  $\angle B \angle Q$   
 (c)  $PQ$  (d)  $QR$   
 (e)  $PQ$  (f)  $QR^2 + PR^2$
- 2 (a) 13 (b) 25
- 3 (a) 8 (b) 5.2
- 4 (a) 8.94 cm (b) 7.21 cm  
 (c) 20.12 cm (d) 12.81 cm  
 (e) 15 cm
- 5 (a)  $170 \text{ m}^2$  (b)  $64 \text{ cm}^2$   
 (c) 80 m

**13.2 Converse of Pythagoras’ Theorem**

- 1 (a) Yes (b) No
- 2 (a) Acute angle triangle  
 (b) Obtuse angle triangle
- 3 (a) No (b)  $144 \text{ cm}^2$   
 (c) Since  $BC^2 = AB^2 + AC^2$ , then  $\angle BAC = 90^\circ$ . Hence,  $\triangle ABC$  is a right-angled triangle.

**HOTS CORNER**

- 1 20 m  
 2 1.8 m

**PISA/TIMSS CORNER**

1 C 2 C 3 48 cm

**PT3 PRACTICE**

- 1 (a) (i) ✓ (ii) ✗ (iii) ✓  
 (b) 15, 12, 81, 9  
 (c) 50 m

- 2 (a) (i) True  
 (ii) False  
 (iii) True
- (b) Not an obtuse-angled triangle  
 (c)  $36 \text{ cm}^2$
- 3 (a) (ii), (iii) and (iv) are right-angled triangles.  
 (b) 5 cm  
 (c) RM2 176

**Pre-PT3 Assessment**

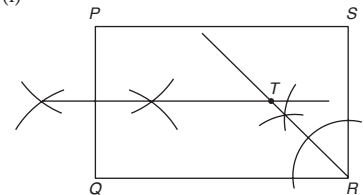
- 1 (a) (i) tenth  
 (ii) 39  
 (iii) 49.1
- (b) (i)  $4 \times 2 + \frac{9}{2} \times \frac{10}{3}$   
 (ii)  $8.3^\circ\text{C}$
- (c) Since Farah obtains more than 25 marks, she will receive an appreciation letter.

- 2 (a) 24, 36, 60  
 (b) 3, 25, 6, 4  
 (c) (i) Price of televisyen =  $\text{RM}(x + 800)$   
 (ii) RM1 400; RM2 200

- 3 (a) (i)  $\frac{1}{4}m$  (ii) 3  
 (iii)  $3n + 7$
- (b) (i)  $x + 15$  (ii) 14  
 (c) Khairul is the heaviest.

- 4 (a) (i) True (ii) False  
 (iii) False  
 (b) (i) 20 (ii) 12  
 (c) RM10 830

- 5 (a) (i)  $8 - x > 5$   
 (ii)  $x + 1 > 4$   
 (iii)  $2x \geq 6$
- (b) (i)

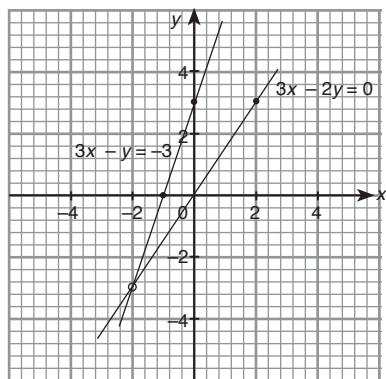


- (ii)  $RT = 2.1 \text{ cm}$   
 (c) RM21 000

- 6 (a)  $15^\circ, 105^\circ, 120^\circ$   
 (b) (i) 7 (ii) 12  
 (c) (i) 30 (ii) 2  
 (iii) 30%

- 7 (a) (i) Parallel  
 (ii) Not parallel  
 (iii) Not parallel

(b) (i)



(ii)  $x = -2, y = -3$

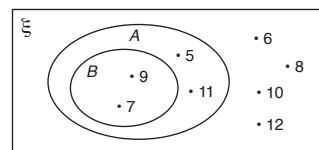
(c) 32 m

- 8 (a) (i) 0 (ii) 2  
(iii) 9  
(b) (i)  $35^\circ$  (ii)  $50^\circ$   
(c) 90%

- 9 (a) (i)  $\notin$  (ii)  $\notin$   
(iii)  $\in$   
(b) (i) 20  
(ii) 30 buah televisyen dijual pada bulan April.  
(c)  $150 \text{ cm}^2$

- 10 (a) (i) True (ii) False  
(iii) True

(b) (i)



- (ii) 6  
(c)  $74^\circ$