Jawapan

Bab 7

1. (a) $>$
(b) $>$
(c) $>$

2. (a) lebih besar daripada
is greater than
(b) kurang daripada
is less than
(c) lebih besar daripada
is greater than
(d) kurang daripada
is less than

3.

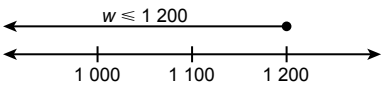
	Hubungan ***Relationship***	**Ketaksamaan algebra** ***Algebraic inequality***
(a)	x kurang daripada 6 *x is less than* 6	$x < 6$
(b)	y lebih besar daripada 2 *y is greater than* 2	$y > 2$
(c)	z kurang daripada 0.8 *z is less than* 0.8	$z < 0.8$

4. (a) (i) t kurang daripada atau sama dengan 3.5 m.
t is less than or equal to 3.5 m.
(ii) $t \leqslant 30$

(b) (i) g lebih besar atau sama dengan RM8.
g is greater than or equal to RM8.
(ii) $g \geqslant 8$

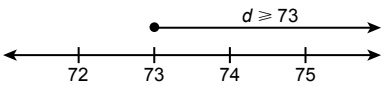
5. (a) $x \geqslant 10$
(b) $x \leqslant 80$
(c) $x > 11.5$

6. (a)



$w \leqslant 1\,200$

(b)



$d \geqslant 73$

7. (a) $<$
(b) $>$
(c) $<$
(d) $<$

8. (a) $\frac{6}{29} > \frac{3}{29}$
(b) $6.3 > -3.6$
(c) $-\sqrt{5} < \sqrt{5}$

9. (a) $\frac{1}{12} < \frac{1}{8}$
(b) $-4 < \frac{1}{2}$
(c) $-15 < 5$

10. (a) $22.5 \times (-1) < 2.5 \times (-1)$
$-22.5 < -2.5$
(b) $\frac{1}{4} \times (-1) > \frac{2}{5} \times (-1)$
$-\frac{1}{4} > -\frac{2}{5}$
(c) $12 \times (-1) < 8 \times (-1)$
$-12 < -8$

11. (a) $-\frac{1}{9} > -\frac{1}{7}$
(b) $\frac{1}{1} < \frac{5}{1}$
$1 < 5$
(c) $\frac{8}{3} > \frac{5}{3}$

12. (a) $\frac{5}{6} > -\frac{2}{3}$
$\frac{5}{6} - \left(-\frac{1}{2}\right) \boxed{>} -\frac{2}{3} - \left(-\frac{1}{2}\right)$
$\frac{4}{3} \boxed{>} -\frac{1}{6}$

(b) $6 > -2$
$6 \times 3 \boxed{>} -2 \times 3$
$18 \boxed{>} -6$

(c) $8 < 12$
$8 \times (-2) \boxed{>} 12 \times (-2)$
$-16 \boxed{>} -24$

(d) $24 > 6$

$24 \div 4 \boxed{>} 4 \div 4$

$6 \boxed{>} 1$

(e) $-20 < -15$

$-20 \div (-5) \boxed{>} -15 \div (-5)$

$4 \boxed{>} 3$

13. (a) $t < 100$

(b) $L \geqslant 60$

14. (a) Masa untuk Pak Ali menyiapkan sebuah kerusi kayu adalah melebihi tiga hari.
Time for Pak Ali to finish making a wooden chair is more than three days.

(b) Berat maksimum muatan yang dibenarkan pada sebuah lori ialah 1 000 kg.
The maximum load weight allowed for a lorry is 1 000 kg.

15. (a) $h + 8 > -39$

$h + 8 - 8 > -39 - 8$

$h > -47$

(b) $-8y > -64$

$\frac{-8y}{-8} < \frac{-64}{-8}$

$y < 8$

(c) $3m - 2 < 10$

$3m - 2 + 2 < 10 + 2$

$3m < 12$

$\frac{3m}{3} < \frac{12}{3}$

$m < 4$

(d) $6 - 12k \geqslant 12$

$6 - 6 - 2k \geqslant 12 - 6$

$-2k \geqslant 6$

$\frac{-2k}{-2} \leqslant \frac{6}{-2}$

$k \leqslant -3$

(e) $-11x - 7 > -7x + 9$

$-11x + 7x - 7 + 7 > -7x - 7x + 9 + 7$

$-4x > 16$

$-4x \div (-4) < 16 \div (-4)$

$x < -4$

16. (a) $1\,500 + 12x \geqslant 3\,300$

$12x \geqslant 3\,300 - 1\,500$

$12x \geqslant 1\,800$

$x \geqslant 150$

Syamim perlu menyimpan sekurang-kurangnya RM150 setiap bulan.
Syamim needs to save at least RM150 *every month.*

(b) $\frac{70}{100} \times 78 = 54.6$

Kedai Roti Jess perlu menggunakan sekurang-kurangnya 55 peket tepung.
Kedai Roti Jess has to use at least 55 *packets of flour.*

Katakan x ialah baki bilangan peket tepung.
Let x be the balance of the number of packets of flour.

$23 + x \geqslant 55$

$x \geqslant 32$

Maka, mereka memerlukan minimum 32 peket tepung.
Therefore, they need a minimum of 32 *packets of flour.*

(c) Perimeter segi empat tepat
Perimeter of the rectangle

$2 \times x + 2 \times \frac{2}{3}x \geqslant 50$

$2x + \frac{4}{3}x \geqslant 50$

$\frac{10}{3}x \geqslant 50$

$\frac{10}{3}x \times \frac{3}{10} \geqslant 50 \times \frac{3}{10}$

$x \geqslant 15$

Maka, panjang minimum segi empat tepat itu ialah 15 cm.
Therefore, the minimum length of the rectangle is 15 cm.

(d) $3(50) + 2(20) + 10x + 2(5) < 265$

$150 + 40 + 10x + 10 < 265$

$10x < 265 - 200$

$10x < 65$

$x < 6.5$

x ialah 4, 5, atau 6 dengan keadaan $x > 3$
x *is* 4, 5, *or* 6 *such that* $x > 3$

17. (a) $x - 1 + 1 < 5 + 1$

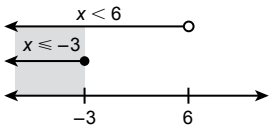
$x < 6$

$5x - 4 + 4 \leqslant -19 + 4$

$5x \leqslant -15$

$\frac{5x}{5} \leqslant \frac{-15}{5}$

$x \leqslant -3$



Maka, / *Therefore*, $x \leqslant -3$

(b) $5x - 7 + 7 \geqslant 3 + 7$

$5x \geqslant 10$

$\frac{5x}{5} \geqslant \frac{10}{5}$

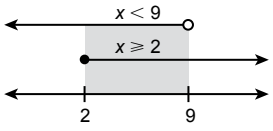
$x \geqslant 2$

$8 - 8 - 2x > -10 - 8$

$-2x > -18$

$\frac{-2x}{-2} < \frac{-18}{-2}$

$x < 9$



Maka, / *Therefore*, $2 \leqslant x < 9$

(c) $4 < 10x - 6$ $\quad 10x - 6 \leqslant 44$

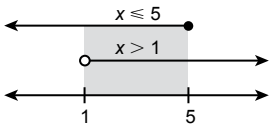
$10x - 6 > 4$ $\quad 10x - 6 + 6 \leqslant 44 + 6$

$10x - 6 + 6 > 4 + 6$ $\quad 10x \leqslant 50$

$10x > 10$ $\quad \frac{10x}{10} \leqslant \frac{50}{10}$

$\frac{10x}{10} > \frac{10}{10}$ $\quad x \leqslant 5$

$x > 1$



Maka, / *Thus*, $1 < x \leqslant 5$

18. Aktiviti PAK-21

Praktis Masteri 7

BAHAGIAN A

1. Markah minimum untuk lulus bagi ujian Matematik ialah 40. Maka, $m \geqslant 40$.
The minimum marks to pass in Mathematics test is 40. Therefore, $m \geqslant 40$.

Jawapan / *Answer*: **A**

2. $4(x - 1) > -12$

$\frac{4(x-1)}{4} > \frac{-12}{4}$

$(x - 1) > -3$

$x - 1 + 1 > -3 + 1$

$x > -2$

Jawapan / *Answer*: **C**

3. $6 - 5p < 21$

$6 - 6 - 5p < 21 - 6$

$-5p < 15$

$\frac{-5p}{-5} > \frac{15}{-5}$

$p > -3$

Jawapan / *Answer*: **B**

4. **A**: $-x < -y$

$\therefore x > y$

B: $x > -y$

$\therefore -x < y$

C: $\frac{1}{x} > \frac{1}{y}$

$\therefore x < y$

D: $\frac{1}{x} < \frac{1}{y}$

$\therefore x > y$

Jawapan / *Answer*: **D**

5. $4 - \frac{4}{3}k < 2k + 7$

$-\frac{4}{3}k - 2k < 7 - 4$

$-\frac{10}{3}k < 3$

$-\frac{10}{3}k \times \left(-\frac{10}{3}\right) > 3 \times \left(-\frac{10}{3}\right)$

$k > -\frac{9}{10}$

Jawapan / *Answer*: **C**

BAHAGIAN B

6. (a) $2.3 \text{ kg} > 1.5 \text{ kg}$

(b) Nanas / *Pineapple* = RM2.10
Tembikai / *Watermelon* = RM1.50

7. (a) ✓ (b) ✗
(c) ✓ (d) ✗

8.

(a) $6k < -24$	$\underline{k < -4}$	$k > -4$
(b) $-\frac{1}{3}m \geqslant -2$	$m \geqslant 6$	$\underline{m \leqslant 6}$
(c) $12 \leqslant 4 - n$	$n \geqslant -8$	$\underline{n \leqslant -8}$
(d) $3p + 8 > 5$	$\underline{p > -1}$	$p > 1$

BAHAGIAN C

9. (a) (i) $-6 > -9$

(ii) $0.60 < 0.606$

(b) $5x - 15 > 35$

$5x - 15 + 15 > 35 + 15$

$5x > 50$

$\frac{5x}{5} > \frac{50}{5}$

$x > 10$

Maka, nilai terkecil bagi x ialah 11.
Therefore, the smallest value of x is 11.

(c) $2x + 8 > -2$

$2x + 8 - 8 > -2 - 8$

$2x > -10$

$\frac{2x}{2} > \frac{-10}{5}$

$x > -5$

$5x - 20 < -5$

$5x - 20 + 20 < -5 + 20$

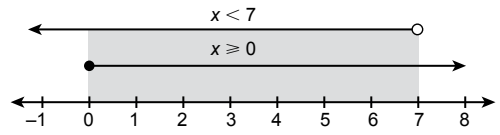
$5x < 15$

$\frac{5x}{5} > \frac{15}{5}$

$x < 3$

Maka, / *Therefore*,
$-5 < x < 3$

(d)

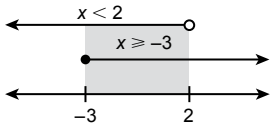


$x = 0, 1, 2, 3, 4, 5$ dan / *and* 6

10. (a)
$$\begin{aligned} 4 - 3s &\leqslant -2 \\ 4 - 4 - 3s &\leqslant -2 - 4 \\ -3s &\leqslant -6 \\ \frac{-3s}{-3} &\geqslant \frac{-6}{-3} \\ s &\geqslant 2 \end{aligned}$$

(b)
$$\begin{aligned} 5x - 6 + 6 &< 3x - 2 + 6 \\ 5x &< 3x + 4 \\ -3x + 5x &< -3x + 3x + 4 \\ 2x &< 4 \\ \frac{2x}{2} &< \frac{4}{2} \\ x &< 2 \end{aligned}$$

$$\begin{aligned} 4x + 1 - 1 &\geqslant 3x - 2 - 1 \\ 4x &\geqslant 3x - 3 \\ -3x + 4x &\geqslant -3x + 3x - 3 \\ x &\geqslant -3 \end{aligned}$$



Maka, / *Hence*, $-3 \leqslant x < 2$

(c) (i) $0 \leqslant s \leqslant 10.0$

(ii)
$$\begin{aligned} \frac{9.5 + 9.3 + 8.6 + s}{4} &\geqslant 9.3 \\ \frac{27.4 + s}{4} &\geqslant 9.3 \\ \frac{27.4 + s}{4} \times 4 &\geqslant 9.3 \times 4 \\ 27.4 + s &\geqslant 37.2 \\ -27.4 + 27.4 + s &\geqslant -27.4 + 37.2 \\ s &\geqslant 9.8 \end{aligned}$$

Nilai terendah s ialah 9.8.
The lowest value of s is 9.8.

Fokus KBAT

Katakan x dan y masing-masing ialah bilangan pokok pisang dan pokok manggis yang boleh ditanam.
Let x and y are the numbers of banana trees and mangosteen trees that can be planted respectively.

$x + y = 24$ ..... ①
$25x + 70y \leqslant 950$ ..... ②

Daripada / *From* ①:
$x = 24 - y$ ..... ③

Gantikan ③ ke dalam ②:
Substitute ③ *into* ②:

$$\begin{aligned} 25(24 - y) + 70y &\leqslant 950 \\ 600 - 25y + 70y &\leqslant 950 \\ 45y &\leqslant 350 \\ y &\leqslant \frac{350}{45} \\ y &\leqslant 7\frac{7}{9} \end{aligned}$$

Daripada / *From* ①:
$y = 24 - x$ ..... ④

Gantikan ④ ke dalam ②:
Substitute ④ *into* ②:

$$\begin{aligned} 25x + 70(24 - x) &\leqslant 950 \\ 25x + 1\,680 - 70x &\leqslant 950 \\ 70x - 25x &\geqslant 1\,680 - 950 \\ 45x &\geqslant 730 \\ x &\geqslant \frac{730}{45} \\ x &\geqslant 16\frac{2}{9} \end{aligned}$$

Maka, Sarip boleh menanam maksimum 7 batang pokok manggis dan 17 batang pokok pisang.
Hence, Sarip can plant a maximum of 7 mangosteen trees and 17 banana trees.