# Penyelesaian Lengkap

Praktis 4

Praktis Formatif

4.1 Persilangan Set
Intersection of Sets

1. (a) (i) $\xi = \{3, 4, 5, 6, 7, 8, 9, 10\}$, $F = \{4, 6, 8, 10\}$, $G = \{4, 8\}$, $F \cap G = \{4, 8\}$

   (ii) $n(F \cap G) = 2$

   (b)
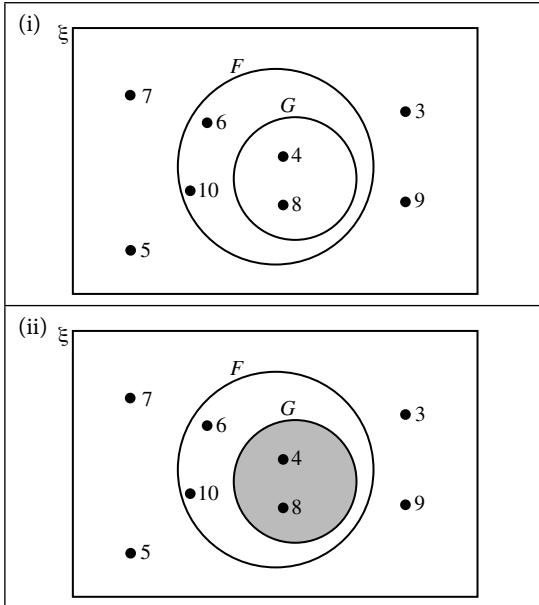
2. (a) $\xi = \{1, 2, 3, 4, 5, 6, 7, 8\}$
   $X = \{2, 3, 4, 5, 7\}$
   $Y = \{1, 2, 3, 6\}$
   $Z = \{2, 4, 6, 8\}$
   (i) $(X \cap Y) = \{2, 3\}$
   $(X \cap Y)' = \{1, 4, 5, 6, 7, 8\}$
   $n(X \cap Y)' = 6$
   (ii) $(Y \cap Z) = \{2, 6\}$
   $(Y \cap Z)' = \{1, 3, 4, 5, 7, 8\}$
   $n(Y \cap Z)' = 6$
   (iii) $(X \cap Z) = \{2, 4\}$
 $(X \cap Z)' = \{1, 3, 5, 6, 7, 8\}$
   $n(X \cap Z)' = 6$
   (iv) $(X \cap Y \cap Z) = \{2\}$
   $(X \cap Y \cap Z)' = \{1, 3, 4, 5, 6, 7, 8\}$
   $n(X \cap Y \cap Z)' = 7$

   (b)
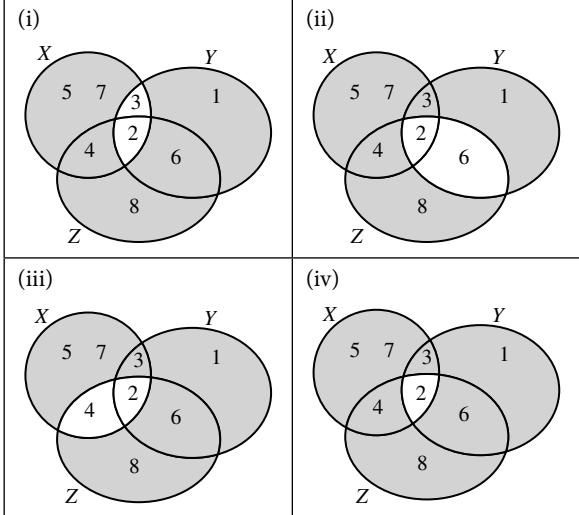
3. (a) $\{a, e, g, r, m\}$ (c) $\{a, p, i, e, g, r, m\}$
   (b) $\{e, g, p, i, a\}$ (d) $\{a, p, i, e, g, r, m\}$

4. (a) Bilangan murid yang menghadiri kedua-dua kelas Biologi dan Matematik ialah:
   Number of pupils who attended both Biology and Mathematics class is:
   $20\% \times 200 = 40$

   (b) Bilangan murid yang menghadiri kelas Biologi:
   Number of pupils who attended Biology class:
   $45\% \times 200 = 90$

   (c) Bilangan murid yang tidak menghadiri kelas tuisyen untuk kedua-dua subjek tersebut:
   Number of students who do not attend tuition classes for both subjects:
 $12\% \times 200 = 24$
   Bilangan murid yang menghadiri kelas Matematik sahaja:
   Number of pupils who attended Mathematics class only:
   $= 200 - 40 - 50 - 24$
   $= 86$

   (d)

© EPH Publishing (M) Sdn. Bhd. (199801017497) 2024

Praktis Intensif Matematik Tingkatan 4
Penyelesaian Lengkap **J1**
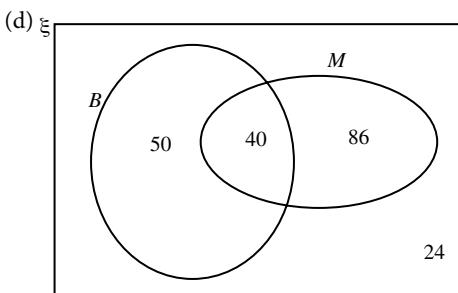
5 (a) $n(P \cap R)' = n(P \cap Q)$
$$3 + x = 3 + 2$$
$$x = 2$$
(b) $n(\xi) = 2 + 3 + 2$
$$= 7$$

6 Katakan jumlah murid ialah x orang.
Let the total number of pupils be x.
(a) $0.6x = 24$
$$x = 40$$
(b) Bilangan murid yang pandai bermain piano dan gitar
The number of pupils who can play piano and guitar
$$= 40 \times \frac{5}{100}$$
$$= 2$$
(c) Bilangan murid yang tidak pandai bermain piano dan gitar
The number of pupils who do not play piano and guitar
$$= 0.2 \times 40$$
$$= 8$$
Bilangan murid yang pandai bermain piano sahaja
The number of pupils who play piano only
$$= (0.6 - 0.05) \times 40$$
$$= 22$$
Bilangan murid yang pandai bermain gitar
The number of pupils who can play guitar
$$= 40 - 8 - 22$$
$$= 10$$

4.2 Kesatuan Set
Union of Sets

1 (a) (i) $A \cup B = \{3, 4, 5, 6, 7, 8, 10\}$
$n(A \cup B) = 7$
(ii) $B \cup C = \{1, 3, 4, 5, 6, 7, 8\}$
$n(B \cup C) = 7$
(iii) $A \cup C = \{1, 3, 4, 5, 6, 10\}$
$n(A \cup C) = 6$
(iv) $A \cup B \cup C = \{1, 3, 4, 5, 6, 7, 8, 10\}$
$n(A \cup B \cup C) = 8$
(b)
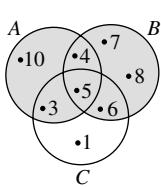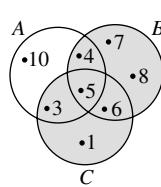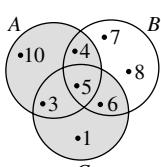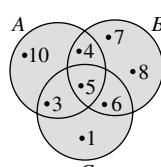
2 (a) (i) $\{3, 4, 5, 6, 7, 8, 9\}$
(ii) $\{1, 2, 3, 4, 5, 6, 7\}$
(iii) $\{1, 2, 3, 6, 7, 8, 9\}$
(iv) $\{1, 2, 3, 4, 5, 6, 7, 8, 9\}$
(b)
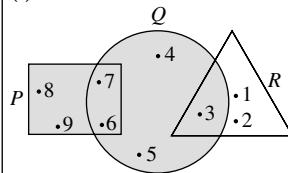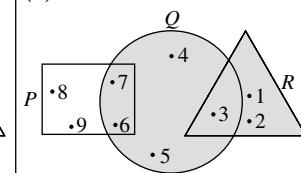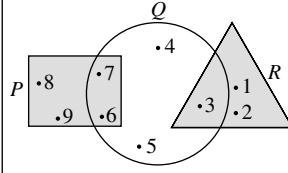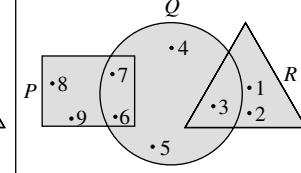
3 (a) $\xi = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$
$A = \{1, 2, 4, 8\}$
$B = \{1, 2, 3, 6\}$
$C = \{2, 4, 6, 8, 10\}$
(i) $A \cup B = \{1, 2, 3, 4, 6, 8\}$
$(A \cup B)' = \{5, 7, 9, 10\}$
$n(A \cup B)' = 4$
(ii) $B \cup C = \{1, 2, 3, 4, 6, 8, 10\}$
$(B \cup C)' = \{5, 7, 9\}$
$n(B \cup C)' = 3$
(iii) $A \cup C = \{1, 2, 4, 6, 8, 10\}$
$(A \cup C)' = \{3, 5, 7, 9\}$
$n(A \cup C)' = 4$
(iv) $A \cup B \cup C = \{1, 2, 3, 4, 6, 8, 10\}$
$(A \cup B \cup C)' = \{5, 7, 9\}$
$n(A \cup B \cup C)' = 3$
(b)

4 (a)
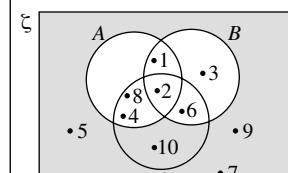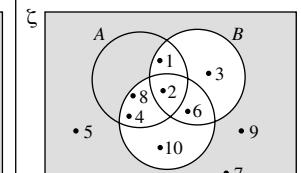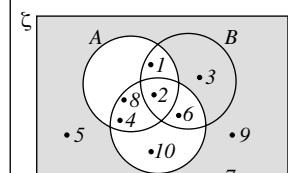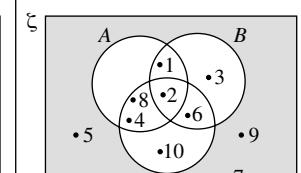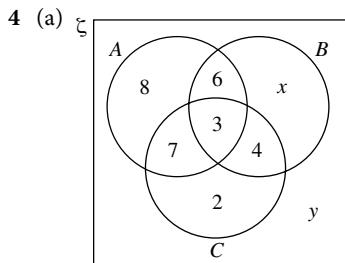
$x = 18 - 6 - 3 - 4$
$x = 5$

(b) $y = 40 - 8 - 6 - 5 - 3 - 4 - 7 - 2$
$y = 5$

5 (a)
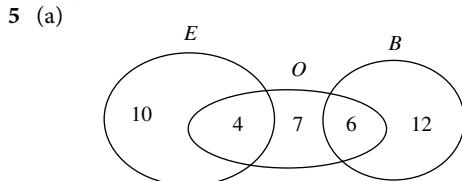
(b) $10 + 4 + 7 + 6 + 12$
= 39 orang pekerja/*staffs*

6 $n(G \cup L') = 21 + 20 + 10$
= 51 orang murid/*pupils*

4.3 Gabungan Operasi Set
Combined Operations on Sets

1 (a) (i) {2, 4, 6, 8, 10}
(ii) {2, 4, 8}
(iii) {4, 8}
(b) (i) {2, 4, 6, 8, 10}
(ii) {4, 8}
(iii) {2, 4, 8}
(c) (i) 5
(ii) 2
(iii) 3

2 (a) (i) $P \cap Q = \{C, F\}$
$R = \{C, D, E, G\}$
$P \cap Q \cup R = \{C, D, E, F, G\}$
(ii) $P = \{A, C, D, F\}$
$Q \cup R = \{B, C, D, E, F, G, H\}$
$P \cap (Q \cup R) = \{C, D, F\}$
(iii) $P \cup R = \{A, C, D, E, F, G\}$
$Q = \{B, C, E, F, H\}$
$P \cup R \cap Q = \{C, E, F\}$
(iv) $Q = \{B, C, E, F, H\}$
$P \cap R = \{C, D\}$
$Q \cup (P \cap R) = \{B, C, D, E, F, H\}$

(b)
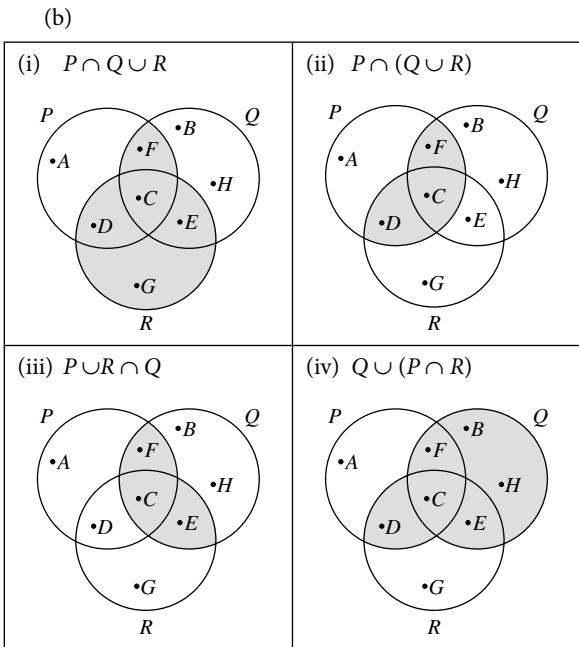
3 (a) $(A \cap B) \cup C$
(b) $B \cup (A \cap C)$

4 (a) $\xi = \{10, 11, 12, 13, 14, 15, 16, 17, 18\ 19, 20\}$
$A = \{15, 17\}$
$B = \{11, 13, 17, 19\}$
$C = \{10, 15, 20\}$
(i) $A' = \{10, 11, 12, 13, 14, 16, 18, 19, 20\}$
$A' \cap B = \{11, 13, 19\}$
$(A' \cap B) \cup C = \{10, 11, 13, 15, 19, 20\}$
(ii) $C' = \{11, 12, 13, 14, 16, 17, 18, 19\}$
$A \cup C' = \{11, 12, 13, 14, 15, 16, 17, 18, 19\}$
$B \cap (A \cup C') = \{11, 13, 17, 19\}$

(b)

5
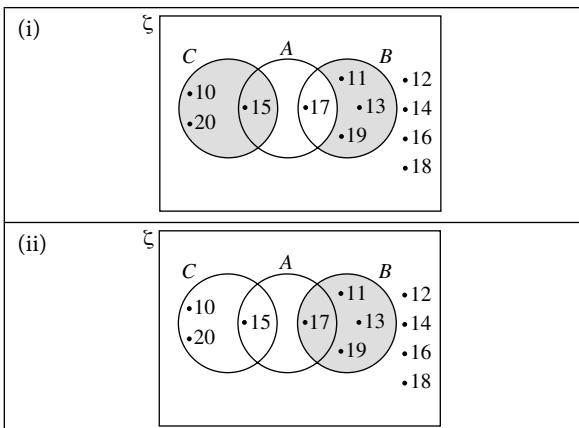
(a) $(A' \cup C) \cap B$	(b) $(A' \cup B') \cap C$	(c) $A \cup (B \cap C')$

6 (a) $(A \cup B)' \cup C$

   (b) $(A \cup C)' \cap B$

7 M = {murid yang menjadi ahli persatuan Matematik},

   B = {murid yang menjadi ahli persatuan Bahasa Inggeris} dan

   S = {murid yang menjadi ahli persatuan Sains}.

   M = {*members of Mathematics society*},

   B = {*members of English language society*} *and*

   S = {*members of Science society*}.

(a)	(b)	(c)
$9 + 7 + 11 = 27$	$5 + 6 + 8 = 19$	$9 + 6 + 11 = 26$

   (d) $50 - 9 - 5 - 7 - 4 - 6 - 8 - 11 = 0$

      Tiada/*No*

   (c) $2 + 5 + 3 = 10$

8 (a) $4h + 6 = 7 + h + 3 + 6 + 5$

         $3h = 15$

          $h = 5$

   (b)

P	$Q \cup R'$	$P \cap (Q \cup R)'$

   $n(P \cap (Q \cup R') = 12 + 7 + 6 = 25$

(c)

$P' \cup R$	Q'	$P' \cup R \cap Q'$

$$n(P' \cup R \cap Q') = 4h + 11 + 4$$
$$= 4(5) + 11 + 4$$
$$= 35$$

Praktis Sumatif

Kertas 1

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

Kertas 2

Bahagian/*Section* A

1.

(a) $Q \cap R$
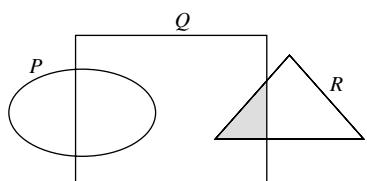
(b) $R \cap (P \cup Q')$
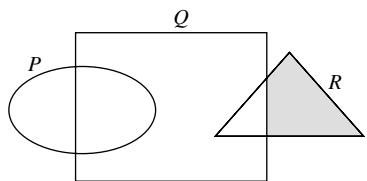
2

(a) $Q \cap R$
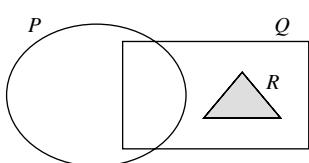
(b) $(P \cup R)' \cap Q$
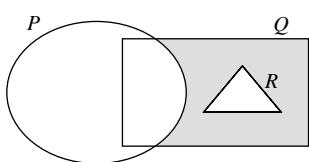

3 (a) $\{4, 9\}$
(b) $\{1, 2, 4, 6, 9\}$
(c)
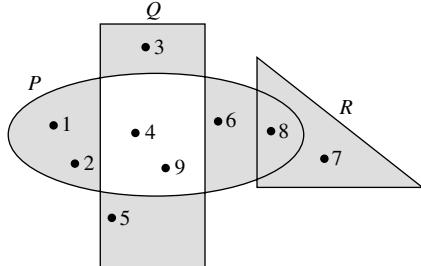
Bahagian/*Section* B

4 (a) $2x + 3x + 6 + x + 4 = 28$
$$6x = 18$$
$$x = 3$$
(b) $2 + 5x = 2 + 5(3)$
$$= 17$$
(c) $2x + 6 = 2(3) + 6$
$$= 12$$
(d) $6 + x = 6 + 3$
$$= 9$$
(e) $2 + 2x + 3x = 2 + 5x$
$$= 2 + 5(3)$$
$$= 17$$
(f) Set A dan/*and* set C

Bahagian/*Section* C

5 (a) Persamaan/*Equation* (1): $x + y = 13$
$$2x + y + x + 15 + 2 = 50$$
Persamaan/*Equation* (2): $3x + y = 33$
(2)–(1): $2x = 20$
$$x = 10$$
Daripada persamaan/*From Equation* (1):
$$10 + y = 13$$
$$y = 3$$
(b) $50 - 2 = 48$
(c) $2x + y + 15 = 2(10) + 3 + 15$
$$= 38$$
(d) $2x + 15 = 2(10) + 15$
$$= 35$$
(e) 3
(f) $T \subset K$