1. **[2 marks]**

$S = \{c, h, i, n, a\}$ $V = \{i, t, a, l, y\}$

List the elements of the set

(i) $S \cap V$

.....

(ii) $S \cup V$

.....

2. **[4 marks]**

A = {Prime numbers between 10 and 16}
B = {Multiples of 3 between 10 and 16}

(a) List the members of $A \cup B$.

.....
(2)

(b) What is $A \cap B$?

.....
(1)

(c) Is it true that $11 \in B$?

.....

Explain your answer.

.....

.....
(1)

3. **[3 marks]**

$A = \{2, 4, 6, 8, 10, 12, 14\}$
$B = \{1, 3, 5, 7, 9, 11, 13\}$
$C = \{3, 6, 9, 12\}$

(a) List the members of the set

(i) $A \cap C$

.....

(ii) $A \cup C$

.....

(2)

(b) Explain why $A \cap B = \emptyset$

.....

(1)

4. **[3 marks]**

(a) $S = \{1, 3, 5, 7\}$
$T = \{2, 3, 7, 11\}$

How many members are there in $S \cup T$?

.....

(1)

(b) $U = \{3, 4, 5\}$
$U \cup V = \{1, 2, 3, 4, 5\}$

The set V has as few members as possible.
List the members of the set V.

.....

(1)

(c) $A = \{\text{Cats}\}$
$B = \{\text{Black animals}\}$

Describe the members of $A \cap B$.

.....

(1)

5. **[3 marks]**

(a) $A = \{s, u, p, e, r\}$
$B = \{c, o, m, p, u, t, e, r\}$

List the members of the set

(i) $A \cap B$

.....

(ii) $A \cup B$

.....

(2)

(b) $X = \{\text{prime numbers}\}$
$Y = \{\text{factors of } 12\}$

Is it true that $X \cap Y = \varnothing$?

Tick (✓) the appropriate box.

Yes	No
☐	☐

Explain your answer.

.....

(1)

6. **[4 marks]**

$\mathcal{E} = \{\textbf{even}\text{ numbers less than } 19\}$
$M = \{\text{multiples of } 3\}$
$F = \{\text{factors of } 12\}$

(a) (i) Explain why it is **not** true that $9 \in M$.

.....

(ii) List the members of M.

.....

(2)

(b) List the members of $M \cap F$.

.....

(2)

7. **[3 marks]**

$\mathscr{E}$ = {odd numbers}
A = {1, 5, 9, 13, 17}
B = {1, 9, 17, 25, 33}
C = {7, 11, 15}

(a) List the members of the set

(i) $A \cap B$,

.....

(ii) $A \cup B$.

.....

(2)

(b) Explain why $A \cap C = \varnothing$

.....

.....

(1)

8. **[3 marks]**

$\mathscr{E}$ = {even numbers}
A = {2, 4, 6, 8, 10}

(a) B is a set such that $A \cap B$ = {4, 8}
The set B has 3 members.

List the members of one possible set B.

.....

(2)

(b) C is a set such that $A \cap C = \varnothing$
The set C has 3 members.

List the members of one possible set C.

.....

(1)

9. **[2 marks]**

$\mathscr{E}$ = {2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12}
A = {odd numbers}
P = {prime numbers}

List the members of the set

(i) $A \cap P$,

.....

(ii) $A \cup P$.

.....

10. **[3 marks]**

$\mathscr{E}$ = {positive whole numbers less than 19}
A = {odd numbers}
B = {multiples of 5}
C = {multiples of 4}

(a) List the members of the set

(i) $A \cap B$

.....

(ii) $B \cup C$

.....

(2)

D = {prime numbers}

(b) Is it true that $B \cap D = \varnothing$?

Tick (✓) the appropriate box.

Yes	No
☐	☐

Explain your answer.

.....

(1)

11. **[2 marks]**

$\mathscr{E}$ = {even numbers}
A = {factors of 8}
B = {factors of 20}

List the members of $A \cap B$

.....

12. **[4 marks]**

(a) $\mathscr{E}$ = {Students in Year 12}
G = {Students who study German}
F = {Students who study French}
M = {Students who study Maths}

(i) $G \cap M = \emptyset$

Use this information to write a statement about the students who study German in Year 12

.....

(ii) Preety is a student in Year 12
Preety $\notin F$.

Use this information to write a statement about Preety.

.....

(2)

(b) A = {2, 4, 6, 8, 10}
$A \cap B$ = {2, 4}
$A \cup B$ = {1, 2, 3, 4, 6, 8, 10}

List all the members of set B.

.....

(2)

13. **[4 marks]**

(a) $A = \{2, 3, 4, 5\}$

$B = \{4, 5, 6, 7\}$

(i) List the members of $A \cap B$.

.....

(ii) How many members are in $A \cup B$?

.....

(2)

(b) $\mathcal{E} = \{3, 4, 5, 6, 7\}$
$P = \{3, 4, 5\}$
Two other sets, Q and R, each contain exactly three members.
$P \cap Q = \{3, 4\}$
$P \cap R = \{3, 4\}$
Set Q is not the same as set R.

(i) Write down the members of a possible set Q.

.....

(ii) Write down the members of a possible set R.

.....

(2)

14. **[4 marks]**

(a) $A = \{1, 2, 3, 4\}$
$B = \{2, 4, 6, 8\}$

Write down the members of $A \cup B$.

.....

(2)

(b) $\mathcal{E} = \{\text{Positive integers less than } 10\}$
$P = \{3, 4, 5, 6, 7, 8\}$
$P \cap Q = \emptyset$

Write down all the possible members of Q.

.....

(2)

15. **[4 marks]**

$\mathcal{E}$ = {Clothes}
A = {Mr Smith's clothes}
B = {Hats}
C = {Mrs Koshi's hats}

(a) (i) Describe the members of the set $A \cap B$

.....

(ii) How many members has the set $A \cap C$?

.....
(2)

(b)

A	B	C	$\mathcal{E}$	$\in$	$\emptyset$	$\cap$	$\cup$

Use a letter or symbol from the box to make each of the following a true statement.

(i) $B \cup C$ = ...

(ii) Mr Smith's favourite shirt ..... A

(2)

16. **[3 marks]**

$\mathcal{E}$ = {1, 2, 3, 4, 5, 6, 7, 8}
P = {2, 3, 5, 7}

(a) List the members of P'

.....
(1)

The set Q satisfies both the conditions $Q \subset P$ **and** $n(Q) = 3$

(b) List the members of **one** set Q which satisfies both these conditions.

.....
(2)

17. **[3 marks]**

$\mathscr{E}$ = {1, 2, 3, 4, 5, 6, 7, 8, 9, 10}
A = {1, 2, 3, 4, 5, 6}
B = {odd numbers}

(a) List the members of $A \cup B$

.....

(1)

C is a set such that $A \cap C = \{4, 5\}$
The set C has 4 members.

(b) List the members of one possible set C

.....

(2)

18. **[3 marks]**

$\mathscr{E}$ = {positive whole numbers **less than** 13}
A = {even numbers}
B = {multiples of 3}
C = {prime numbers}

(a) List the members of the set

(i) $A \cap B$

.....

(ii) $B \cup C$

.....

(2)

(b) Is it true that $14 \in A$?

Tick (✓) the appropriate box.

Yes	No
☐	☐

Explain your answer.

.....

(1)

19. **[5 marks]**

$\mathscr{E} = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$

$A = \{\text{even numbers}\}$

$B = \{\text{multiples of 3}\}$

(a) List the members of set B.

.....

(1)

(b) Find $A \cup B$

.....

(1)

(c) Find $A \cap B$

.....

(1)

x is a member of $\mathscr{E}$

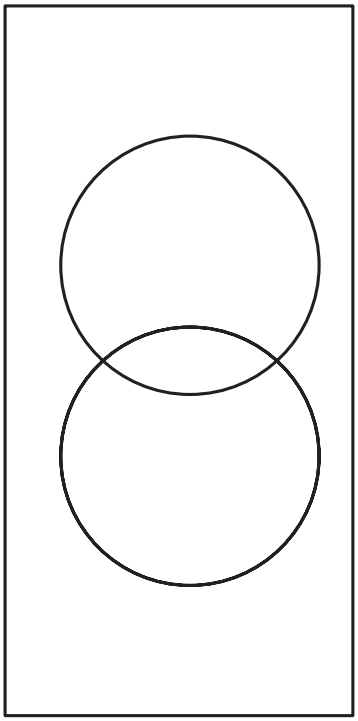
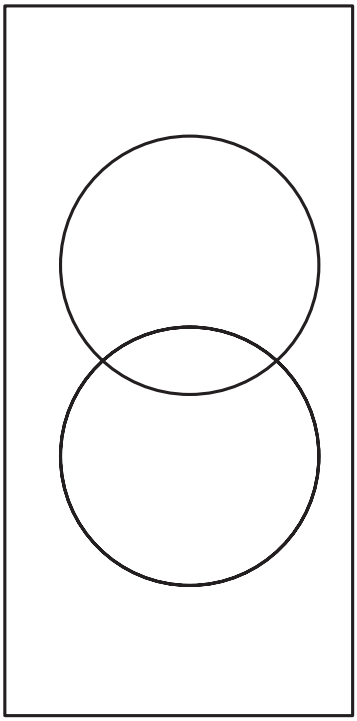
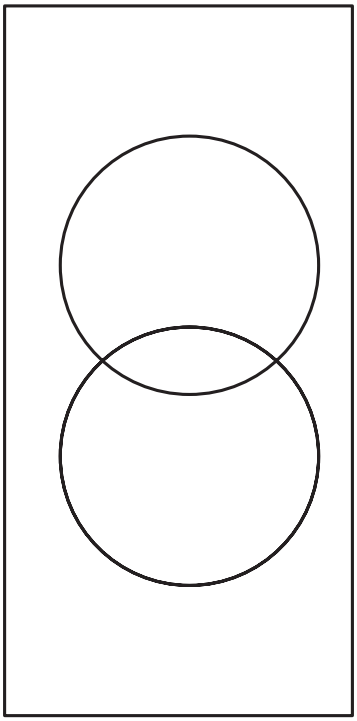
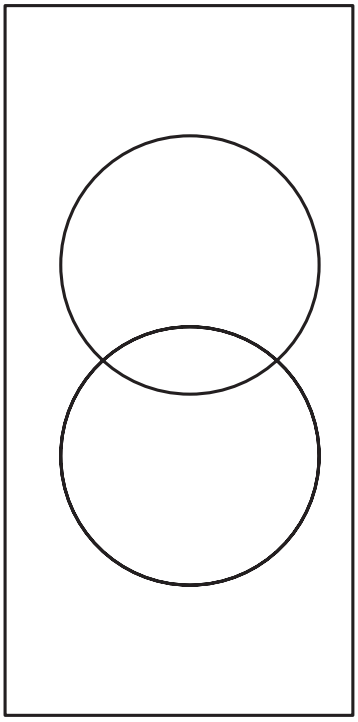
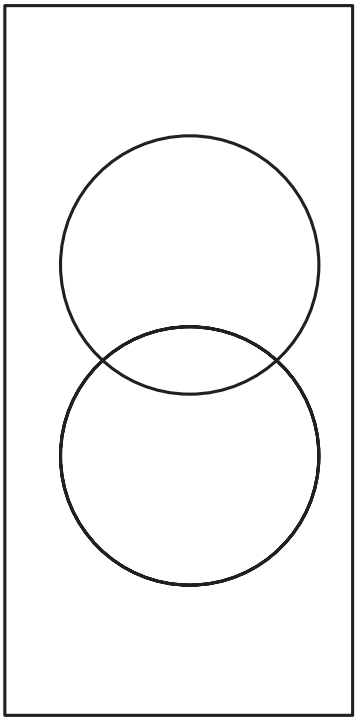
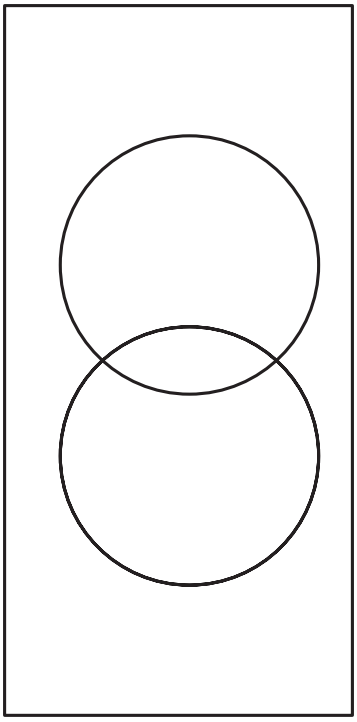
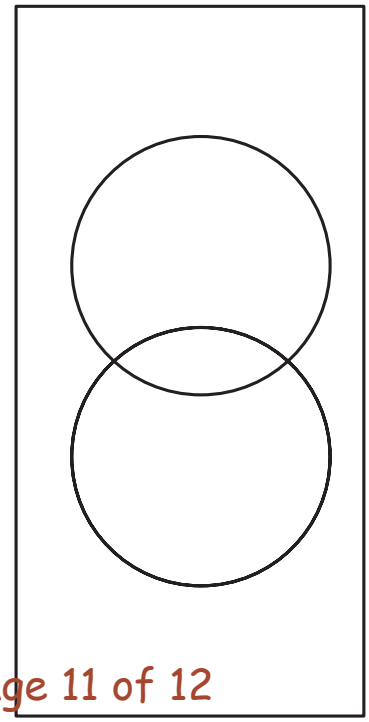
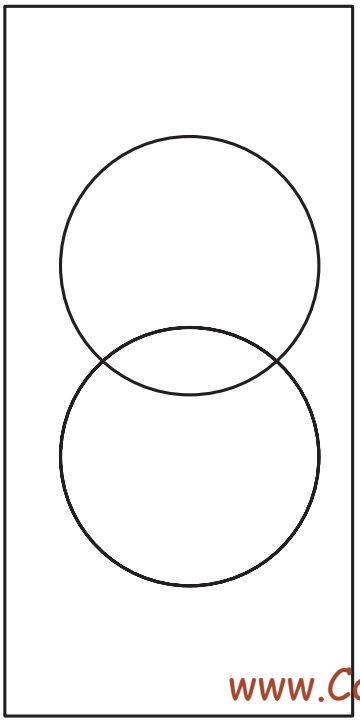
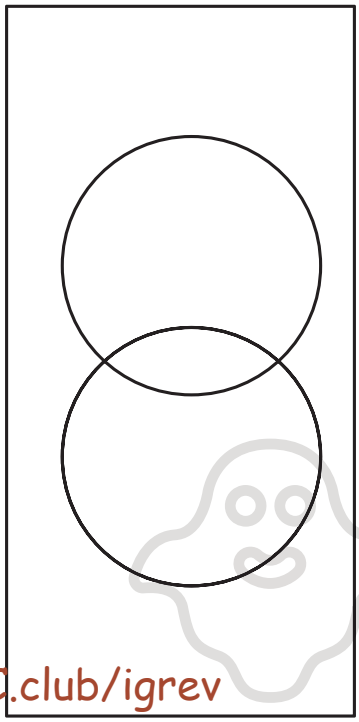
$x \in B$

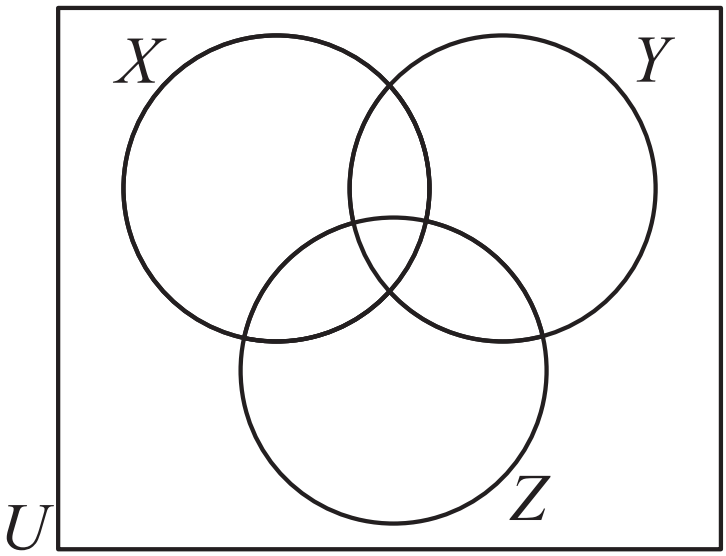
$x \notin A$

(d) What are the possible values of x?

.....

(2)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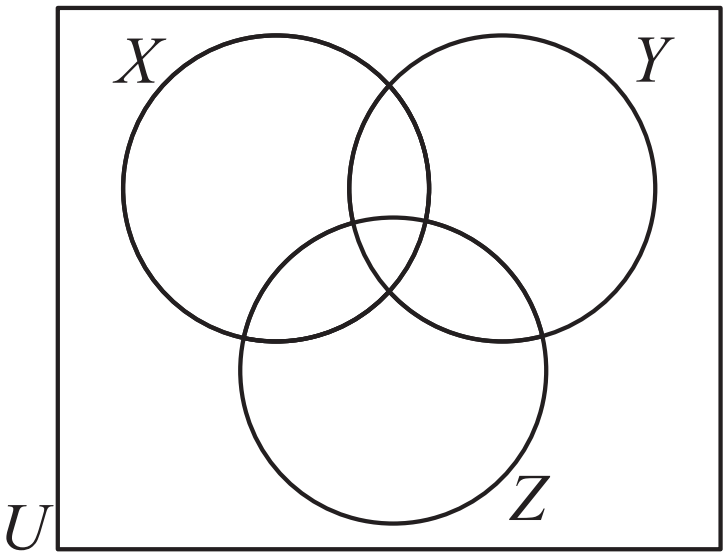
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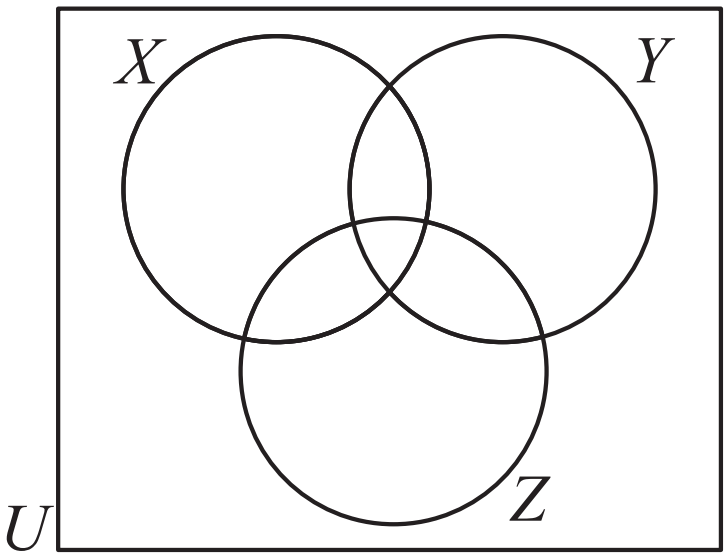
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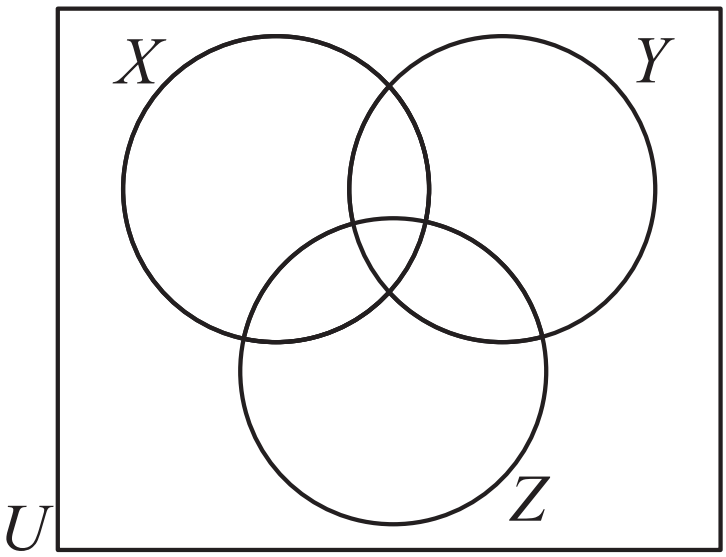
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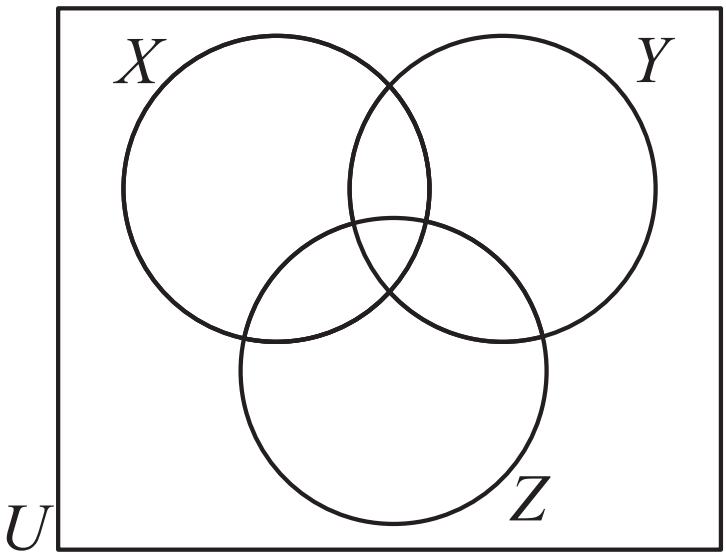
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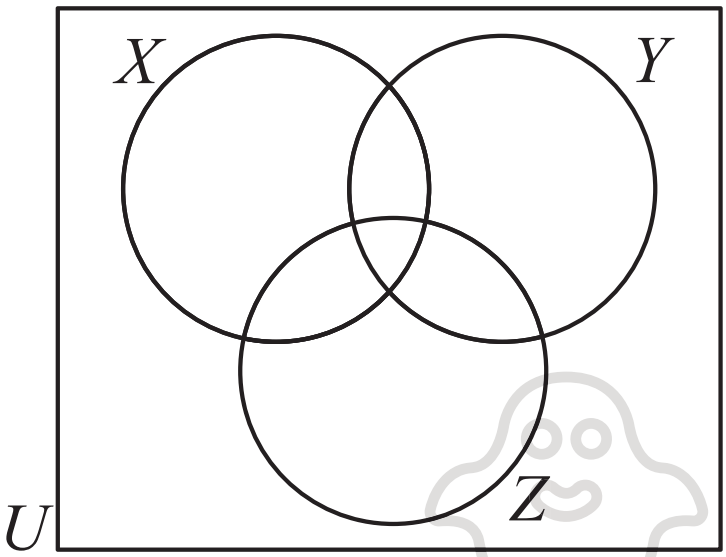
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