

The Panda Math Tutor

www.thepandamathtutor.com

Sets

Student Worksheet
Questions & Working Space
IGCSE Mathematics

Name: _____

Date: _____

Prepared by
Nikolas Agisilaou

Teach → Practice → Reason → Apply → Challenge → Master

Contents

1 Part I — Topic-by-Topic Exercises 2

1.1 Sets and Set Notation 2

1.2 Types of Sets 4

1.3 Venn Diagrams 7

1.4 Set Operations 9

1.5 Combined Expressions and Shading 12

1.6 The Number of Elements Formula 14

1.7 Problems Involving Three Sets 17

1.8 Set-Builder Notation and Number Sets 20

2 Part II — Mixed Review 22

3 Part III — Examination-Style Practice 26

Note

How to use this worksheet. These questions are built *strictly* on the *Sets* notes: set notation, types of sets and subsets, Venn diagrams, the four set operations, combined expressions and shading, the number of elements formula, three-set problems, and set-builder notation.

Notation reminder. $\in$ (is an element of), $\notin$ (is not an element of), $n(A)$ (number of elements), $\emptyset$ (empty set), $\subseteq$ (subset), $\subset$ (proper subset), $\cup$ (union), $\cap$ (intersection), A' (complement), $A \setminus B$ (difference).

Working space. Ruled lines are provided after each question, and blank Venn diagrams are printed where you need them — write straight onto the diagrams. Always fill a Venn diagram from the overlap outwards, and check at the end that all the regions add up to $n(U)$.

Checking your answers. Full step-by-step solutions, a marking scheme for the exam paper, and a quick answer key are in the separate booklet “*Sets — Solutions & Answer Key.*” Try each question honestly before you look.

1 Part I — Topic-by-Topic Exercises

1.1 Sets and Set Notation

Exercise E1 *[Basic]*

Let $A = \{4, 9, 14, 19, 24\}$. State whether each of the following is true or false:

- (a) $9 \in A$ (b) $12 \in A$ (c) $24 \notin A$ (d) $n(A) = 5$

Exercise E2 *[Basic]*

Write each of the following using set notation:

- (a) the set of distinct letters in the word “GEOMETRY”
 (b) the set of even numbers between 3 and 17

Exercise E3 [Standard]

Write each of the following using set notation, and state the number of elements in each:

- (a) the set of distinct vowels in the word “EDUCATION”
 - (b) the set of prime numbers between 20 and 40
 - (c) the set of factors of 24
-
-
-
-
-

Exercise E4 [Standard]

A student writes: “the set of letters in the word BANANA is $\{B, A, N, A, N, A\}$ ”. Explain the error and write the set correctly, stating n of the set.

Exercise E5 [Intermediate]

Let $A = \{x : x \text{ is a multiple of } 6, 1 \leq x \leq 40\}$. List the elements of A and state $n(A)$.

Preview ends here

27 more pages are in the full pack.

Sets — Worksheet — €11.99

Buy the pack and the complete PDF lands in your inbox.

Personal study use only — please don't resell or share.