

# Sets and Functions

Click on a question number to see how your answers were marked and, where available, full solutions.

Question Number	Score	Review
<b>Sets</b>		
Question 1	3 marks	
<b>Functions</b>		
Question 2	3 marks	
Question 3	3 marks	
Question 4	3 marks	
<b>Total</b>	<b>12 marks</b>	

Congratulations, you passed this quiz with a sufficient score. You may include this attempt as part of your self-assessment evidence.

## Performance Summary

<b>Exam Name:</b>	Sets and Functions
<b>Session ID:</b>	3181621279785954
<b>Student's Name:</b>	Pawan Kumarasinghe (223503335)
<b>Exam Start:</b>	Wed Aug 13 2025 16:56:17
<b>Exam Stop:</b>	Wed Aug 13 2025 17:09:19
<b>Time Spent:</b>	0:13:02

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# Question 1

Compute the following set operations, given the sets:

$$U = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20\}$$

$$A = \{1, 3, 8, 9, 11, 14, 15, 16, 19\}$$

$$B = \{x \in U : x \text{ is a multiple of } 2\}$$

$$C = \{x \in U : x > 15\}$$

Please enter all the sets below using the set enumeration method. To enter a set, please enter it using the notation `set( [list of elements] )`, for example `set(1,2,3,4)`. To enter the empty set, enter `set()`.

a)

$$C \setminus \overline{(B \setminus A)} =$$

`set(18,20)` {18, 20} ✓

Score: 1 mark ✓

▼ Hide feedback

✓ Your answer is numerically correct. You were awarded 1 mark.

You scored 1 mark for this part.

b)

$$C \cup \overline{(B \setminus C)} =$$

set(1,3,5,7,9,11,13,15,16,17,18,19,20)

 $\{1, 3, 5, 7, 9, 11, 13, 15, 16, 17, 18, 19, 20\}$  ✓

Score: 1 mark ✓

▼ Hide feedback

✓ Your answer is numerically correct. You were awarded 1 mark.

You scored 1 mark for this part.

c)

$$\overline{(C \cap (C \cup A))} =$$

set(1,2,3,4,5,6,7,8,9,10,11,12,13,14,15)

 $\{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15\}$  ✓

Score: 1 mark ✓

▼ Hide feedback

✓ Your answer is numerically correct. You were awarded 1 mark.

You scored 1 mark for this part.

## Question 2

What are the properties of the relation with the domain  $\{1, 2, 3, 4, 5, 6\}$  and codomain  $\{4, 7, 8, 10, 11, 12\}$  given by:

<b>x</b>	<b>y</b>
1	10
2	4
3	12
4	8
5	11
6	7

---

What are the properties of this relation? (Check all that applies).

☐ Not a function    ☒ A function    ☒ A surjective function

☒ An injective function    ☒ A bijective function



**Score: 3 marks** ✓

✓ Your answer is correct. You were awarded **3** marks.

You scored **3** marks for this part.

## Question 3

What are the properties of the relation with the domain  $\{1, 2, 3, 4, 5, 6\}$  and codomain  $\{2, 3, 4, 5, 7, 12\}$  given by:

<b>x</b>	<b>y</b>
1	4
2	2
3	5
4	7
5	12
6	3

---

What are the properties of this relation? (Check all that applies).

☐ Not a function    ☒ A function    ☒ A surjective function

☒ An injective function    ☒ A bijective function



**Score: 3 marks** ✓

✓ Your answer is correct. You were awarded **3** marks.

You scored **3** marks for this part.

## Question 4

What are the properties of the relation with the domain  $\{1, 2, 3, 4, 5, 6\}$  and codomain  $\{2, 3, 5, 6, 9, 12\}$  given by:

<b>x</b>	<b>y</b>
1	9
2	6
3	5
4	3
5	12
6	2

---

What are the properties of this relation? (Check all that applies).

☐ Not a function    ☒ A function    ☒ A surjective function

☒ An injective function    ☒ A bijective function



**Score: 3 marks** ✓

✓ Your answer is correct. You were awarded **3** marks.

You scored **3** marks for this part.

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