13/08/2025, 17:09 Sets and Functions

Sets and Functions

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

Question Number	Score	Review
Sets		
Question 1	3 marks	
Functions		
Question 2	3 marks	
Question 3	3 marks	
Question 4	3 marks	
Total	12 marks	

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

Performance Summary

Sets and Functions
3181621279785954
Pawan Kumarasinghe (223503335)
Wed Aug 13 2025 16:56:17
Wed Aug 13 2025 17:09:19
0:13:02

Created using <u>Numbas (https://www.numbas.org.uk)</u>, developed by <u>Newcastle University</u> (https://www.newcastle.ac.uk).

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 sent, enter set().

a)

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

$$set(18,20) \quad \{18,20\} \checkmark$$

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:

- x y
- 1 10
- 2 4
- 3 12
- 4 8
- 5 11
- 6 7

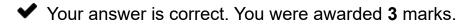
What are the properties of this relation? (Check all that applies).

- Not a function
- A function
- A surjective function

- An injective function
- A bijective function



Score: 3 marks ✓



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:

- X У
- 1 4
- 2 2
- 3 5
- 4 7
- 5 12
- 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:

X	\
^	

- 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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