CLASS: Set Theory Review

- Due Feb 16 at 11:59pm
- Points 7
- Questions 7
- Time Limit None
- Allowed Attempts Unlimited

Instructions

This CLASS assignment is a short review to Set Theory that you learned in Intermediate Algebra.

You have multiple attempts in answering the question

My last year Lecture on Set Theory (https://www.youtube.com/watch?v=ilrGXchIdcE)

Set Theory Page by Page (https://www.youtube.com/watch?v=-DV9nmfufHY&list=PLiwEbczHeZcuf7VyebtyKcVDqfViUkqfh&index=6)

Take the Quiz Again

Attempt History

	Attempt	Time	Score
KEPT	Attempt 4	1 minute	7 out of 7
LATEST	Attempt 4	1 minute	7 out of 7
	Attempt 3	3 minutes	6 out of 7
	Attempt 2	3 minutes	6 out of 7
	Attempt 1	8 minutes	3.83 out of 7

Correct answers are hidden.

Score for this attempt: 7 out of 7
Submitted Feb 16 at 9:53pm
This attempt took 1 minute.

Question 1
1 / 1 pts

Basic Sets (https://www.youtube.com/watch?v=IndzBLZ2YP8&list=PLiwEbczHeZcuf7VyebtyKcVDqfViUkqfh&index=142)

Review of Basic Operations (https://www.youtube.com/watch?v=qz2lH-GnW5w&list=PLiwEbczHeZcuf7VyebtyKcVDqfViUkqfh&index=143)

Review of Set Operations Examples (https://www.youtube.com/watch?v=H_0QwgnJ69g&list=PLiwEbczHeZcuf7VyebtyKcVDqfViUkqfh&index=144)

Now answer the following question:

$$A = \{m \in \mathbf{Z} \mid m = 6r + 12 \text{ for some } r \in \mathbf{Z}\}$$
$$B = \{n \in \mathbf{Z} \mid n = 3s \text{ for some } s \in \mathbf{Z}\}.$$

As we discussed in the lecture, what is the relation between A and B?

- (●) A is a subset of B
- ( ) B is a subset of A
- ( ) A=B
- ( ) A and B are disjoint

Question 2
1 / 1 pts

Basic Sets (https://www.youtube.com/watch?v=IndzBLZ2YP8&list=PLiwEbczHeZcuf7VyebtyKcVDqfViUkqfh&index=142)

Review of Basic Operations (https://www.youtube.com/watch?v=qz2lH-GnW5w&list=PLiwEbczHeZcuf7VyebtyKcVDqfViUkqfh&index=143)

Review of Set Operations Examples (https://www.youtube.com/watch?v=H_0QwgnJ69g&list=PLiwEbczHeZcuf7VyebtyKcVDqfViUkqfh&index=144)

Now answer the following question:

$$A = \{m \in \mathbf{Z} \mid m = 2a \text{ for some integer } a\}$$
$$B = \{n \in \mathbf{Z} \mid n = 2b - 2 \text{ for some integer } b\}$$

As we discussed in the lecture, what is the relation between A and B?

- [x] A is a subset of B
- [x] B is a subset of A
- [x] A=B
- [ ] A and B are disjoint

Question 3
1 / 1 pts

Set Rules (https://www.youtube.com/watch?v=GYmfr11X1BE&list=PLiwEbczHeZcuf7VyebtyKcVDqfViUkqfh&index=154)

Set Identities (https://www.youtube.com/watch?v=7AsE9v7DoKQ&list=PLiwEbczHeZcuf7VyebtyKcVDqfViUkqfh&index=155)

Now answer the following question:

What is the name of the following law?

$$\text{(a) } A \cup B = B \cup A \quad \text{and} \quad \text{(b) } A \cap B = B \cap A.$$

Commutative Laws

Question 4
1 / 1 pts

Set Rules (https://www.youtube.com/watch?v=GYmfr11X1BE&list=PLiwEbczHeZcuf7VyebtyKcVDqfViUkqfh&index=154)

Set Identities (https://www.youtube.com/watch?v=7AsE9v7DoKQ&list=PLiwEbczHeZcuf7VyebtyKcVDqfViUkqfh&index=155)

Now answer the following question:

What is the name of the following law?

(a) $(A \cup B) \cup C = A \cup (B \cup C)$ and
(b) $(A \cap B) \cap C = A \cap (B \cap C)$.

Associative Laws

Question 5
1 / 1 pts

Set Rules (https://www.youtube.com/watch?v=GYmfr11X1BE&list=PLiwEbczHeZcuf7VyebtyKcVDqfViUkqfh&index=154)

Set Identities (https://www.youtube.com/watch?v=7AsE9v7DoKQ&list=PLiwEbczHeZcuf7VyebtyKcVDqfViUkqfh&index=155)

Now answer the following question:

What is the name of the following law?

(a) $A \cup (B \cap C) = (A \cup B) \cap (A \cup C)$ and
(b) $A \cap (B \cup C) = (A \cap B) \cup (A \cap C)$.

Distributive Laws

Question 6
1 / 1 pts

Set Rules (https://www.youtube.com/watch?v=GYmfr11X1BE&list=PLiwEbczHeZcuf7VyebtyKcVDqfViUkqfh&index=154)

De Morgan's Property of Sets Proof (https://www.youtube.com/watch?v=HabwTiKFz4M&list=PLiwEbczHeZcuf7VyebtyKcVDqfViUkqfh&index=156)

Now answer the following question:

What is the name of the following law?

$$\text{(a) } (A \cup B)^c = A^c \cap B^c \quad \text{and} \quad \text{(b) } (A \cap B)^c = A^c \cup B^c.$$

De Morgan's laws

Question 7
1 / 1 pts

Now answer the following question:

True or False?

$$A \cap B = A$$

- [ ] True under no condition
- [ ] Always False
- [x] True if A is a subset of B
- [ ] True if B is a subset of A
- [x] True if A=B

Quiz Score: 7 out of 7