Problem Set 2

1

0.0/1.0 point (graded)

Which of the following are true?

- [ ] $\{0\} = \emptyset$

- [ ] $\{0, 1, 2\} = \{2, 0, 1, 1\}$ ✔

- [ ] $\{\{0\}, 1\} = \{0, \{1\}\}$

Submit	You have used 0 of 2 attempts

ℹ Answers are displayed within the problem

2

0.0/1.0 point (graded)

Which of the following set pairs intersect?

- [ ] $\{1, 2, 3\}$ and $\{2, 4, 6\}$ ✔

- [ ] {prime numbers} and {even numbers} ✔

- [ ] $\{x \in \mathbb{R} \mid x^2 \leq 4\}$ and $[2, 7)$ ✔

- [ ] $\emptyset$ and $\emptyset$

- [ ] $\{\emptyset, 1, 2\}$ and $\emptyset$

Submit   You have used 0 of 3 attempts

ⓘ Answers are displayed within the problem

3

0.0/5.0 points (graded)
For any two sets A and B, add $\subseteq$ or $\supseteq$ to make the following statements true.

Hint: Venn Diagrams may help.

- $A \cap B$ _____ A

Select an option ▼   **Answer:** $\subseteq$

- $A \cup B$ _____ A

Select an option ▼   **Answer:** $\supseteq$

- $A - B$ _____ A

Select an option ▼   **Answer:** $\subseteq$

- $A \cap B$ _____ $A \cup B$

Select an option ▼   **Answer:** $\subseteq$

- $A - B$ _____ $A \Delta B$

Select an option ▾   **Answer:** $\subseteq$

Submit   You have used 0 of 1 attempt

ℹ Answers are displayed within the problem

4

0.0/4.0 points (graded)
Simplify the following expressions.

- $(A^c)^c$

Select an option ▾   **Answer:** A

- $(A \Delta B) \Delta B$

Select an option ▾   **Answer:** A

- $(\Omega \cap A) \cup (B \cap A)$

Select an option ▾   **Answer:** A

- $(A \cup \Omega) \cap (\emptyset \cup A^c)$

Select an option ▾   **Answer:** A^c

Submit   You have used 0 of 2 attempts

ℹ Answers are displayed within the problem

5

0.0/1.0 point (graded)
Which of the following statements hold for all A?

☐ $A \times \emptyset = \emptyset$ ✔

☐ $A \times \emptyset = A$

☐ $A \subseteq A^2$

☐ $A \in A^2$

☐ $A \times A^c = \emptyset$

Explanation

Because there is no elements in the empty set, the cartesian product between empty set and any other sets will be empty.

Submit   You have used 0 of 3 attempts

ⓘ   Answers are displayed within the problem