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Worksheet: The Algebra of Sets: Properties & Laws of Set Theory

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1. Set A = {1, 5, 6, 7} and Set B = {0, 1, 7, 15}. What is the A ∪ B?

- ○ A ∪ B = {1, 7}
- ○ A ∪ B = {1, 5, 6, 7, 15}
- ○ A ∪ B = {0, 1, 1, 5, 6, 7, 15}
- ✔ A ∪ B = {0, 1, 5, 6, 7, 15}

2. Set A = {1, 5, 6, 7} and Set B = {0, 1, 7, 15}. Which statement regarding these sets is TRUE?

- ○ 5 ∈ Sets A and B
- ✔ 1 ∈ Sets A and B
- ○ 7 ∉ Sets A and B
- ○ 1 ∉ Sets A and B

3. Set A = {1, 5, 6, 7} and Set B = {0, 1, 7, 15}. What is A ∩ B?

- ○ A ∩ B = {1, 5, 7, 15}
- ○ A ∩ B = {0, 15}
- ✔ A ∩ B = {1, 7}
- ○ A ∩ B = {1, 1}

4. Set A = {-10, -5, -2, -1, 0). Which of the following is a complement of set A?

- ○ -1
- ○ -5
- ✔ 1
- ○ -10

5. The following is an example of which of the laws of sets? $D \cup (S \cap B) = (D \cup S) \cap (D \cup B)$

✔ Distributive law

○ Associative law

○ Difference of sets

○ Commutative law