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Math 301

Assignment 2

1. U = {1, 2, 3, 4, 5}, A={1, 2, 3}, B={1, 3, 5}.
2. ­
3. Same sets as above
4. |𝐴 ∪ 𝐵| = 4
5. |𝐴 × 𝐵| = 3\*3 = 9
6. || = 2
7. | × 𝐵 × ∅| = 0
8. | 𝒫( {1,2,3,5,8}) | = = 32
9. a.

b. = {(1,2,4),(1,2,5),(1,2,6),(1,3,4),(1,3,5),(1,3,6)}

c. = {(0,0,0),(0,0,2),(0,2,0),(0,2,2),(2,0,0),(2,0,2),(2,2,0),(2,2,2)}

d. 𝒫(𝒫(∅))= (｛｝)= {}

1. T or F when is a set of all integers
2. T
3. F
4. T
5. F
6. T
7. F
8. {1,2,3} T
9. {1,2,3} F
10. Statements, then T or F
11. Stop, look, and listen

Not a statement

1. Every real number is an even integer.

False statement

1. Every even integer is a real number.

True statement

1. For any real numbers 𝑥 and 𝑦, if 5𝑥 = 5𝑦, then 𝑥 = 𝑦.

True statement

1. For any real numbers 𝑥 and 𝑦, if , then 𝑥 > 𝑦.

False statement

1. There exist sets that are finite.

True statement

1. There exist sets that are infinite.

True statement

1. 42

Not a statement

1. The answer is 42.

Not a statement (but is true according to Deep Thought)

1. For every real number 𝑥, −2 ≤ cos 𝑥 ≤ 2.

True statement

1. The integer 8 is both even and a power of 2.

8 is even and power of 2 = 8 is even and 8 is power of 2，So,

1. The identity matrix is not invertible.
2. The first test is either on Wednesday or Friday.

Test is either on Wednesday or Friday = Test is on Wednesday or test is on Friday, so

1. 𝑥 ≠

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1. 𝑥 ≤

, so

1. 𝑥 ∈ 𝐴 ∩

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1. 𝑥 ∈ 𝐴 ∪

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