

Math 18000 Homework 1

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Due: 23rd September 6pm

Question 1: Use a diagram argument to show that $\overline{A \cup B} = \overline{A} \cap \overline{B}$

Question 2:

Find sets A, B and C such that $A \cap (B - C)$ is a subset of $A \cap C$

Question 3:

Find numbers x, y and z such that $(x \div y) \div z \neq x \div (y \div z)$. Even better, do this so that all the divisions are defined (i.e. with no remainder).

Question 4:

- (a) Write the binary number 110010 in base 20 notation
- (b) Compute 1001×110 in binary
- (c) Write the (base 10) number 49 in binary

Question 5:

Consider the number 1512

- Is it divisible by 4?
- Is it divisible by 9?