

Ideas in Mathematics, Fall 2023, Weekly worksheet 3

Instructor: Daniel Krashen

1. Given sets A, B, C , is it always true that $B \cap C$ is a subset of $A \cap (B \cup C)$?
Why or why not?

2. Given sets B, C , is it always true that $B \cap C$ is a subset of $B \cup C$? Why or why not?

3. An integer is called even if it can be written in the form $2n$ for n some other integer. An integer is called odd if it is not even. Show that every odd integer can be written in the form $2n + 1$ for some other integer n .

make sure you don't use any information you may know about even and odd numbers besides the information supplied in this problem!

4. Show that if a is an even integer and b is an odd integer, then $a + b$ is an odd integer. You can use the results of the previous question.

make sure you don't use any information you may know about even and odd numbers besides the information supplied in this (or the last) problem!