

Mathematics 300 Homework, September 9, 2024.

Problem 1. Prove or give a counterexample: If n^3 is odd, then n is odd.
Hint: Contrapositive.

Problem 2. Do problem 6 on page 97 of the text.

Problem 3. Prove or give a counterexample: If $3 \mid a$ and $6 \mid b$, then $18 \mid (ab + 2a^2)$.

Problem 4. Prove or give a counterexample: for every integer n we have $6 \mid ((n+1)^3 - (n-1)^3)$