

Problem Set 1 Foundations Due 1/19/2007

Four of these problems will be graded, with each problem worth 5 points. Clear and complete justification is required for full credit. You are welcome to discuss these problems with anyone and everyone, but must write up your own final submission without reference to any sources other than the textbook and instructor. Submissions must be on clean paper with no ragged edges.

1. If n is an integer for which n^3 is odd, then n is odd.
2. The product of a throddodd number with a throdd number is throddodd.
3. If p , q , and r are integers for which p divides q , then pr divides qr .
4. The product of two rational numbers is rational.
5. Prove Theorem 2.2.1 from Devlin.
6. Show that the propositional $\neg(P \vee Q)$ and $(\neg P) \wedge (\neg Q)$ are equivalent.