

Problem Set 1 Foundations Due 4/23/2006

Each problem is 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.

1. The cube of an odd number is odd.
2. The square of a throddodd number is throdd.
3. If an integer n is divisible by 6, then n is divisible by 3.
4. The product of two rational numbers is rational.
5. Prove Theorem 2.2.1 from Devlin.
6. Show that the propositionals $P \wedge (Q \vee R)$ and $(P \wedge Q) \vee (P \wedge R)$ are equivalent.