3. (5 pts) Carefully prove: the difference between any two odd integers is even.

Suppose m and n are any two odd integers.
By definition of odd, $m = 2k+1$ and $n = 2k+1$ for some integer k.

$$m+n = (2k+1) + (2k+1)$$
$$= 4k+2$$
$$= 2(2k+1)$$

Let $t = 2k+1$ where t is an integer
$\therefore m+n = 2t$ by definition of even.

4. (5 pts) Carefully prove: the quotient of any two nonzero rational numbers is rational