Numbers in Other Bases

Modified version of problem provided by Mike Pinter, Belmont University

Part 1

Consider numbers written in base b, where $2 \le b \le 9$. Clearly indicate how you can tell quickly whether a number in base b is odd or even. Offer justification for your claim.

Part 2

When given a number in base b and base 10, indicate when you can determine if b is odd or even and when you can not.