Problem Set 0 - Sample Problem Set

by Alice Exception

Please read the sections of the syllabus on problem sets and honor code before starting this homework.

1. [**11 points**] Prove that for every odd integer n, $n^2 - 1$ is divisible by 8.

Solution $1^1 - 1 = 0$, which is divisible by 8. $3^2 - 1 = 8$, which is divisible by 8. $5^2 - 1 = 24$, which is divisible by 8. And so on. Therefore, if n is odd, $n^2 - 1$ is divisible by 8.