Kerry Ojakian's CSI 35 Class
Class Assignment #2

1. Suppose $P(n)$ is the statement: "$3|(n^3 - n)$". Suppose you want to prove $P(n)$ holds for all $n \geq b$, for some integer b.

   (a) What is the smallest b you can choose?

   (b) Verify $P(n)$ for three distinct integers n.

   (c) Write down the statment $P(k + 1)$.

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2. Consider the proposition: $n^2 + n$ is even, for $n \geq 1$.
   Do just the start of the inductive proof. For the full inductive proof you should 1) state what statement $P(n)$ you are doing induction on, 2) show $P(n)$ is true for the base case, and 3) do the inductive step.
   Just do (1) and (2). That is, state exactly what $P(n)$ is, then state and prove the base case. Do **not** do the inductive step.

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3. Equalities. From Rosen Section 5.1, do: 3, 4, 5, 9, 11

4. Inequalities. From Rosen Section 5.1, do: 18 - 23

5. Divisibility. From Rosen Section 5.1, do: 31 - 34