6. a) Determine which amounts of postage can be formed using just 3-cent and 10-cent stamps.
   
b) Prove your answer to (a) using the principle of mathematical induction. Be sure to state explicitly your inductive hypothesis in the inductive step.
   
c) Prove your answer to (a) using strong induction. How does the inductive hypothesis in this proof differ from that in the inductive hypothesis for a proof using mathematical induction?
   
7. Which amounts of money can be formed using just two-dollar bills and five-dollar bills? Prove your answer using strong induction.
   
8. Suppose that a store offers gift certificates in denominations of 25 dollars and 40 dollars. Determine the possible total amounts you can form using these gift certificates. Prove your answer using strong induction.
   
*9. Use strong induction to prove that $\sqrt{2}$ is irrational. [Hint: Let $P(n)$ be the statement that $\sqrt{2} \neq n/b$ for any positive integer $b$.]