

A professional soccer player succeeds in scoring a goal on 84% of his penalty kicks. Assume that the success of each kick is independent.

- (a) In a series of games, what is the probability that the first time he fails to score a goal is on his fifth penalty kick?
- (b) What is the probability that he scores on 5 or fewer of his next 10 penalty kicks?
- (c) Suppose that our soccer player is out of action with an injury for several weeks. When he returns, he only scores on 5 of his next 10 penalty kicks. Is this evidence that his success rate is now less than 84%? Explain.