Math Masters

After only six months, R App Inc. is making a sizable profit. "We should donate some of our profits to a worthy cause," Athena thinks aloud. Rick replies, "How about a donation to our school because they made us the mathematicians we are today?" "Our gift might inspire others to excel in math, too," Athena chimes in.

After considering gifts like a random lunch menu generator for the cafeteria and a statue of Isaac Newton, the grateful duo donates a scholarship to the first contestant to correctly answer four challenging problems in a row in a math competition.

WORK THE MATH (Show your work on separate paper.)

For the first math competition, there are three contestants:

Contestant	Average Math Test Score
Contestant A	95%
Contestant B	90%
Contestant C	80%

1. What is the probability that each of the contestants will answer four questions in a row correctly?

Hint: You can assume the probability of a contestant answering a single question correctly equals his or her average test score.

Contestant A _____ Contestant B _____ Contestant C _____

2. If Athena and Rick decided to make the competition more difficult by adding a fifth question, what would the probability of winning be for each contestant?

Contestant A _____ Contestant B _____ Contestant C _____

3. What is the probability of all three contestants answering four questions in a row correctly?

Working with compound probability for the contest gave Athena and Rick ideas for new math problems for the app.

Iggy the iguana has become a breakout reality star! Iggy's agent has successfully negotiated an appearance on the hit show *You Want Me to Do What?!* To win the grand prize for the Love a Lizard Foundation, Iggy must complete three wacky but dangerous challenges: Dodge the Doberman (75% probability of winning), Root Canal (80% probability of winning), and Is It Spoiled? (90% probability of winning). Considering the individual probabilities for each event, what is the probability that Iggy will complete all three events and win the grand prize? What do you think is the most efficient way to solve this problem?