Smartphone Test Prep

Athena and Rick, two middle school students frequently called upon for their powerful math skills, have been flooded with numerous student requests for help with the dreaded upcoming mathematics standardized test. "Wow, how are we going to get to everyone in time?" wondered Athena.

Rick had a flash: How about a smartphone app that provides our classmates with fun practice problems? The pair got to work on their first set of math problems.

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

1. Lee and Lily Limelight, the famous celebrity couple (famous for what, we don't know!), love to dress Iggy, their pet iguana, for photographers. Iggy's hats include a diamond tiara, a leather biker cap, a silk jester's hat, and a bejeweled pith helmet. Iggy's footwear consists of hot-pink high-top sneakers, rhinestone work boots, and three-inch platform shoes. Using a **table**, determine how many outfits the Limelights can make for Iggy, assuming they pick one hat and one set of footwear.

2. Lee decides to purchase two vests for Iggy, one chartreuse and the other teal. Using a **tree diagram**, determine how many outfits he could make with one hat, one vest, and one set of footwear. (You can use the tree diagram on the classroom poster as an example.)

3. Lily then purchases a little bling for Iggy: one silver necklace and one gold necklace. Using the **fundamental counting principle**, determine the number of outfits she could make with one of each category of clothing, including footwear, one hat, one vest, and one necklace.

NOW TRY THIS

If the Limelights reach into Iggy's closet and pick one complete outfit at random, what is the probability that the outfit will include a tiara, high-tops, a teal vest, and a silver necklace?

Solve using a method of your choice, and be sure to explain how you arrived at your answer.

Hint: Think about probability as the number of outcomes meeting the requirements out of the total number of equally likely outcomes.