

8.7 Slacker's Simulation

A Solidify Understanding Task

I know a student who forgot about the upcoming history test and did not study at all. To protect his identity, I'll just call him Slacker. When I reminded Slacker that we had a test in the next class, he said that he wasn't worried because the test has 10 true/false questions. Slacker said that he would totally guess on every question, and since he's always lucky, he thinks he will get at least 8 out of 10.



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I'm skeptical, but Slacker said, "Hey, sometimes you flip a coin and it seems like you just keep getting heads. You may only have a 50/50 chance of getting heads, but you still might get heads several times in a row. I think this is just about the same thing. I could get lucky."

1. What do you think of Slacker's claim? Is it possible for him to get 8 out of 10 questions right? Explain.

I thought about it for a minute and said, "Slacker, I think you're on to something. I'm not sure that you will get 80% on the test, but I agree that the situation is just like a coin flip. It's either one way or the other and they are both equally likely if you're just guessing." My idea is to use a coin flip to simulate the T/F test situation. We can try it many times and see how often we get 8 out of 10 questions right. I'm going to say that if the coin lands on heads, then you guessed the problem correctly. If it lands on tails, then you got it wrong.

Try it a few times yourself. To save a little time, just flip 10 coins at once and count up the number of heads for each test.

	# Correct (Heads)	# Incorrect (Tails)	% Correct
Test 1			
Test 2			
Test 3			
Test 4			
Test 5			

Did you get 8 out of 10 correct in any of your trials?



Based on your trials, do you think Slacker has a good chance of getting 80% correct?

Use technology to 50 simulate more tests. Now what do you think of Slacker's chances of getting 80% correct. Explain why.

