Practice worksheet | Probability

Designing and interpreting simulations

Name: _____ Date: _____

6 questions | 15 marks

1. Describe a random-digit simulation of a 30% chance. [2 marks]

2. A simulation gives 47 events in 250 trials. Find relative frequency. [2 marks]

3. Explain why generating one uniform integer 2-12 does not simulate two dice sums. [2 marks]

4. Design a simulation of two counters drawn without replacement from 3 red and 2 blue. [3 marks]

5. Runs of 100 and 1000 trials estimate $P(A)$ as 0.66 and 0.604. If the theoretical probability is 0.6, which is closer and by how much? [3 marks]

6. Does a larger run guarantee that every 1000-trial simulation estimate is closer to the theoretical probability than every 100-trial estimate? Explain. [3 marks]