Practice worksheet | Discrete probability distributions

Interpreting distribution results

Name: _____ Date: _____

6 questions | 13 marks

1. A sample fault count has mean 1.8. Explain whether any sample can contain exactly 1.8 faults. [2 marks]

2. A model gives probability 0.04 that demand exceeds capacity. Find the expected number of exceedances in 250 comparable days. [2 marks]

3. $X \sim \text{Bin}(5, 0.1)$. Is observing $X = 0$ inconsistent with the model? Quantify your answer. [3 marks]

4. Two systems have equal expected daily cost. Explain why that alone does not establish which one a risk-averse manager should choose. [2 marks]

5. A binomial probability is displayed as 0.0000 after rounding. Must the event be impossible? [2 marks]

6. A return rate estimated last year is used for this year’s changed product range. Give a specific limitation of a binomial forecast using the old rate. [2 marks]