Practice worksheet | Discrete probability distributions

Expected value

Name: _____ Date: _____

6 questions | 13 marks

1. X takes values 1, 2 and 4 with probabilities 0.2, 0.5 and 0.3. Find E(X). [2 marks]

2. A fair die is rolled and X is its score. Find E(X). [2 marks]

3. A ticket pays 20 dollars with probability 0.1 and 0 dollars otherwise. It costs 3 dollars. Find expected net gain. [2 marks]

4. X is 0 or 5. If E(X) = 2, find P(X = 5). [2 marks]

5. A machine makes 0, 1 or 2 faulty items per batch with probabilities 0.7, 0.2 and 0.1. Find the expected number over 50 batches. [3 marks]

6. A forecast says E(X) = 2.4 calls per minute. Explain why 2.4 need not be a possible call count. [2 marks]