Practice worksheet | Discrete probability distributions

# Variance and standard deviation

Name: _____ Date: _____

6 questions | 13 marks

**1.** $X$ is 0 or 2 with equal probabilities. Find its mean and variance. [2 marks]

**2.** $E(X) = 3$ and $E(X^2) = 14$. Find variance and standard deviation. [2 marks]

**3.** $X$ is $-1$ or 1 with equal probabilities. Find its mean and standard deviation. [2 marks]

**4.** A payout in dollars has variance 9. State its standard deviation and units. [2 marks]

**5.** $X$ has values 1, 2 and 3 with probabilities $\frac{1}{4}$, $\frac{1}{2}$ and $\frac{1}{4}$. Find $E(X^2)$ and $\mathrm{Var}(X)$. [3 marks]

**6.** A student obtains $\mathrm{Var}(X) = -0.8$ from a valid exact probability table. Explain why this cannot be accepted. [2 marks]