

Flashcards

Learning & Memorizing Key Topics and Formulas

SOA Exam P

Spring 2017 Edition



ACTEX

a/s/m

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**Possible Values for
the Probability of Event E**

$$0 \leq P(E) \leq 1$$

(2.1)

Probability of Event (E') (“not E ”)

$$P(E') = 1 - P(E)$$

(3.1.2)

Notation for Union of Events E and F

$$E \cup F$$

(3.1.2)

**Moment Generating Function for a Type B
Negative Binomial Random Variable X**

$$M_X(t) = \left(\frac{p}{1 - q \cdot e^t} \right)^r$$

(6.2.6)

**Probability Function for a Discrete Uniform Random Variable X ,
with Domain $x = 1, 2, \dots, n$**

$$p(x) = \frac{1}{n}, \text{ for } x = 1, 2, \dots, n$$

(5.6)

**Expected Value of a Discrete Uniform Random Variable X ,
with Domain $x = 1, 2, \dots, n$**

$$E[X] = \frac{n+1}{2}$$

(5.6)

**Density Function for the Pareto Random Variable X ,
with Parameters α and β**

$$f(x) = \frac{\alpha \cdot \beta^\alpha}{x^{\alpha+1}}$$

(8.6.2)

**Cumulative Distribution Function for the Pareto Random
Variable X , with Parameters α and β**

$$F(x) = 1 - \left(\frac{\beta}{x}\right)^\alpha$$

(8.6.3)

**Expected Value of the Pareto Random Variable X ,
with Parameters α and β**

$$E[X] = \frac{\alpha\beta}{\alpha-1}, \text{ provided } \alpha > 1$$

(8.6.4)