



Faisal Shahzad, 30, a United States naturalized citizen from Pakistan, pleaded guilty to a failed attempt to explode a car bomb in Times Square in New York City in May 2010. Shahzad was sentenced to life in prison. (Songquan Deng/Shutterstock.) z - value 1.645 Faisal Shahzad, 30, a United States naturalized citizen from Pakistan, pleaded guilty to a failed attempt to explode a car bomb in Times Square in New York City in May 2010. Shahzad was sentenced to life in prison. (Songquan Deng/Shutterstock.)

$$P(ppf) = (0.8)(0.8)(0.2) = 0.128$$

$$(1) f(x_i) \geq 0$$

$$(2) \sum_{i=1}^n f(x_i) = 1$$

$$(3) f(x_i) = P(X = x_i)$$

$$f(x) = \{0.038, \dots, x = 1, 0.102, \dots, x = 2, 0.172, \dots, x = 3, 0.204, \dots, x = 4, 0.174, \dots, x = 5, 0.124, \dots, x = 6, \dots\}$$

Formula 1:

$$(1) \quad P(\Omega) = \int_{-\infty}^{+\infty} f(x) dx = 1$$

Formula 2:

$$(2) \quad E(X) := \int_{-\infty}^{+\infty} x f(x) dx$$

A third one, with references to 1 and 2:

$$\begin{aligned} E(aX + b) &= \int_{-\infty}^{+\infty} (ax - b) f(x) dx \\ (3) \quad &= a \int_{-\infty}^{+\infty} x f(x) dx + b \int_{-\infty}^{+\infty} f(x) dx \\ &\stackrel{(1),(2)}{=} aE(X) + b \end{aligned}$$

And another one:

$$(4) \quad V(X) = \frac{a^2 + b^2 + c^2 - ab - ac - bc}{18}$$