# Normal Distribution Assignment - Formulas in MS Word

Below are the key formulas and notations used in solving normal distribution problems. These are formatted to be entered directly into Microsoft Word using Insert → Equation or pressing Alt + =.

## 1. Z-Score Formula

z = \frac{x - \mu}{\sigma}

## 2. Probability Notation

P(X < x)

## 3. Standard Normal Distribution Example

P(X < 110) = P\left(Z < \frac{110 - 100}{15}\right) = P(Z < 0.67)

## 4. Using Z-Table Value

P(Z < 0.67) = 0.7486

## 5. Range Probability Example

P(90 < X < 120) = P\left(\frac{90 - 100}{15} < Z < \frac{120 - 100}{15}\right) = P(-0.67 < Z < 1.33) = P(Z < 1.33) - P(Z < -0.67) = 0.9082 - 0.2514 = 0.6568