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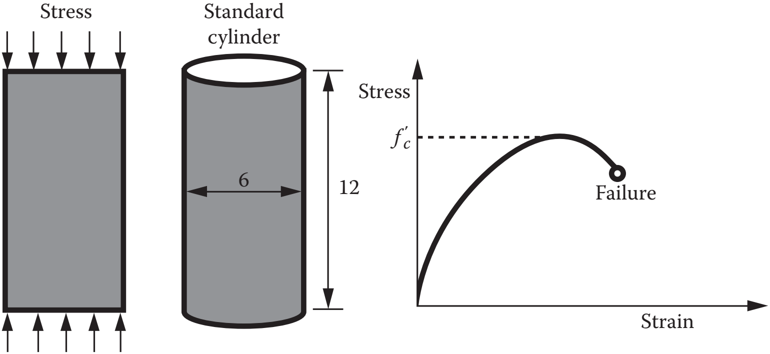

Figure 2.1 Concrete cylinder test considered in Example 2.1.

002x001.eps

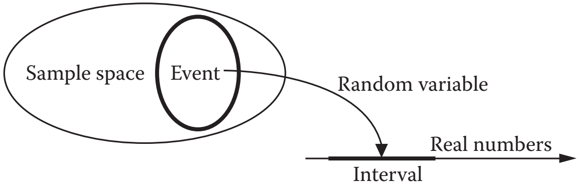

Figure 2.2 Schematic representation of a random variable as a function.

002x002.eps

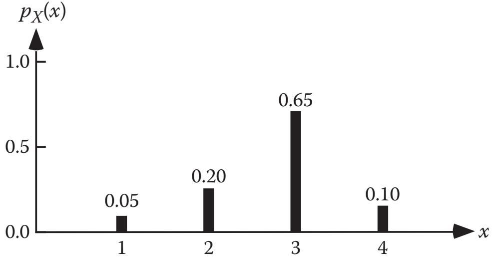

Figure 2.3 A probability mass function.

002x003.eps

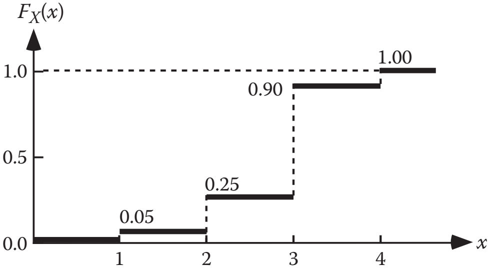

Figure 2.4 A CDF for a discrete random variable.

002x004.eps

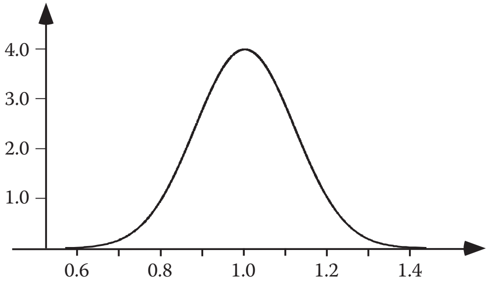

Figure 2.5 Example of a PDF.

002x005.eps

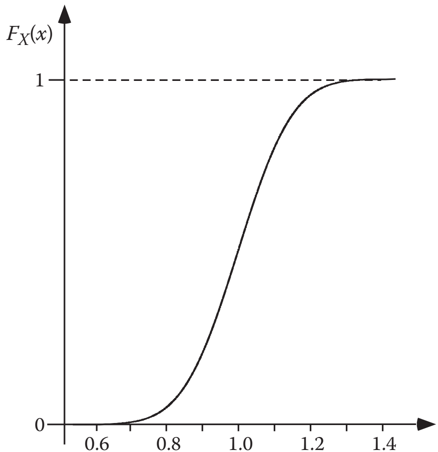

Figure 2.6 Example of a CDF.

002x006.eps

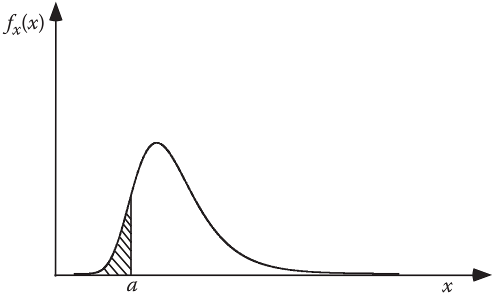

Figure 2.7 Relationship between CDF and PDF described by Equation 2.13.

002x007.eps

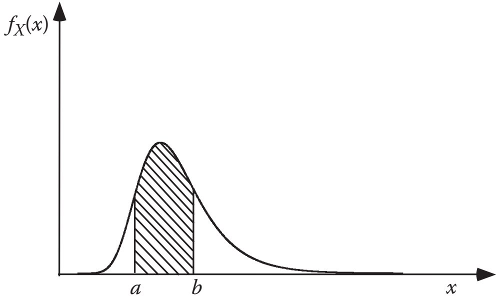

Figure 2.8 Graphical representation of $F_X(b) - F_X(a)$ in Equation 2.15.

002x008.eps

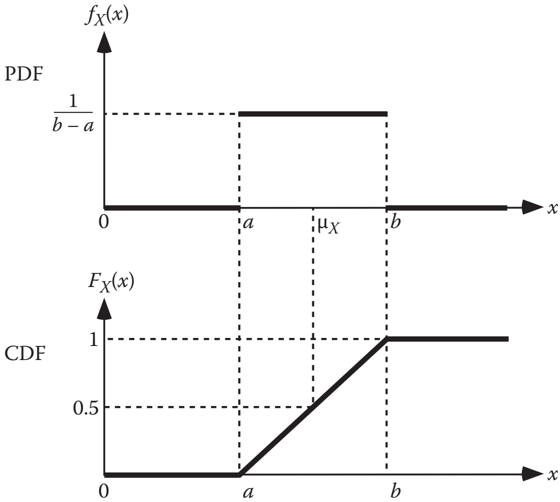

Figure 2.9 PDF and CDF of a uniform random variable.

002x009.eps

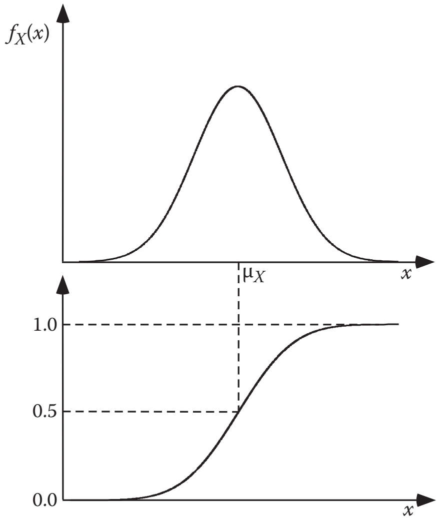

Figure 2.10 PDF and CDF of a normal random variable.

002x010.eps

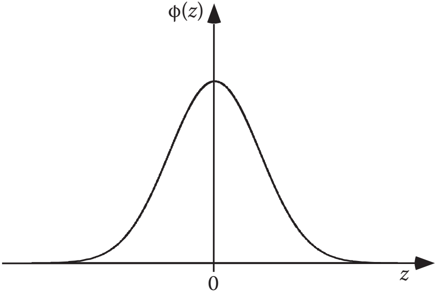

Figure 2.11 PDF $\phi(z)$ for a standard normal random variable.

002x011.eps

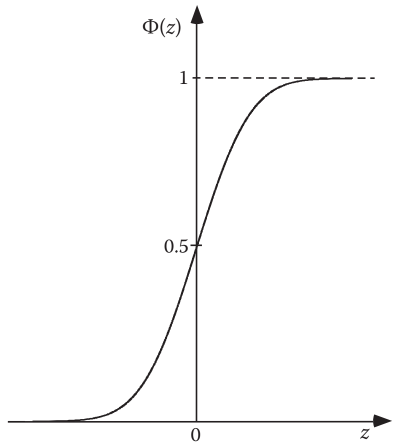

Figure 2.12 CDF $\Phi(z)$ for a standard normal random variable.

002x012.eps

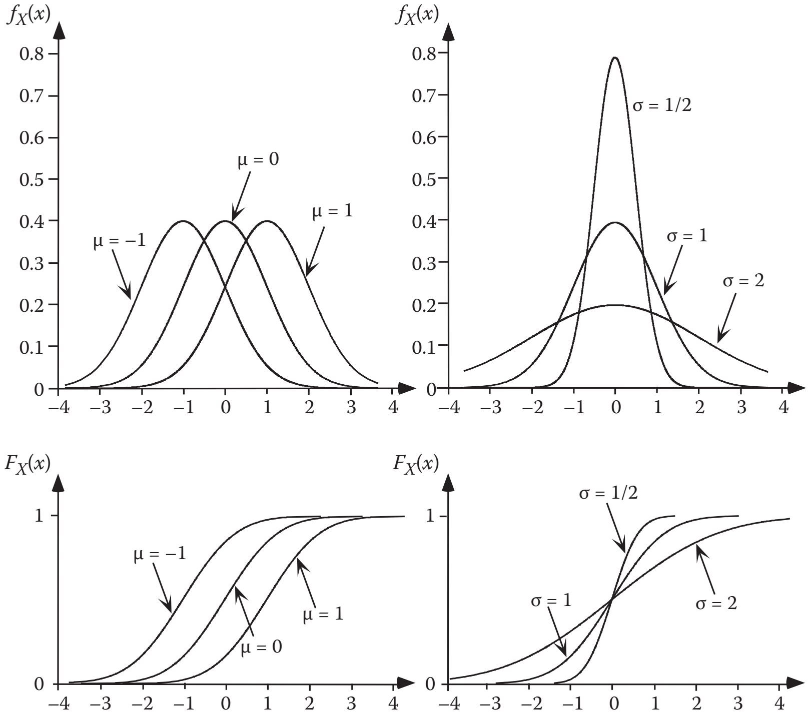

Figure 2.13 Examples of PDFs and CDFs for normal random variables.

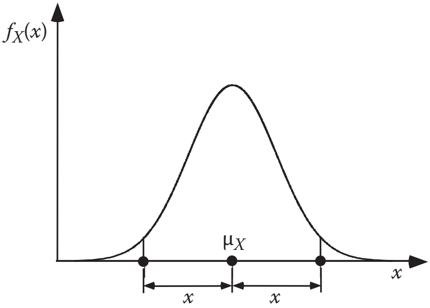

Figure 2.14 Normal random variable PDF is symmetrical about the mean.

002x014.eps

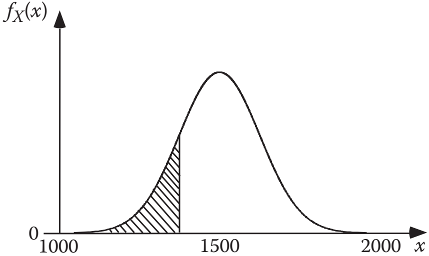

Figure 2.15 PDF of normal random variable in Example 2.4.

002x015.eps

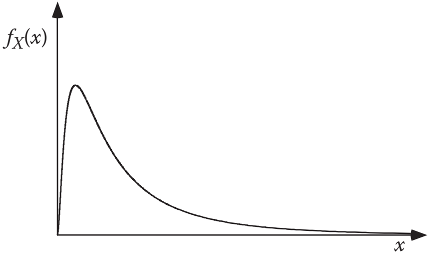

Figure 2.16 PDF of a lognormal random variable.

002x016.eps

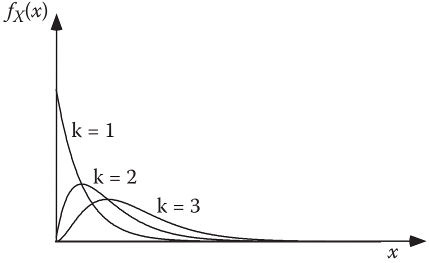

Figure 2.17 PDFs of gamma random variables.

002x017.eps

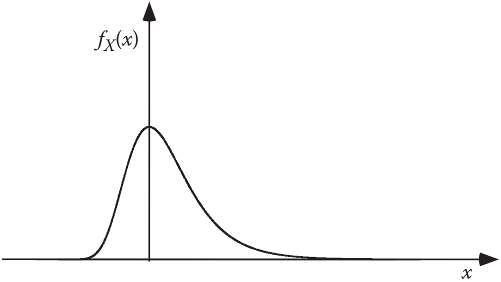

Figure 2.18 PDF of an extreme Type I random variable.

002x018.eps

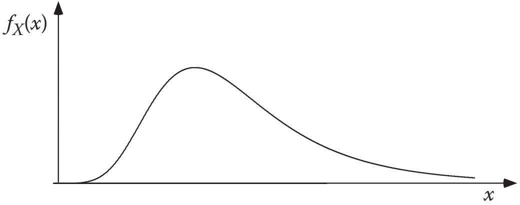

Figure 2.19 PDF for an extreme Type II random variable.

002x019.eps

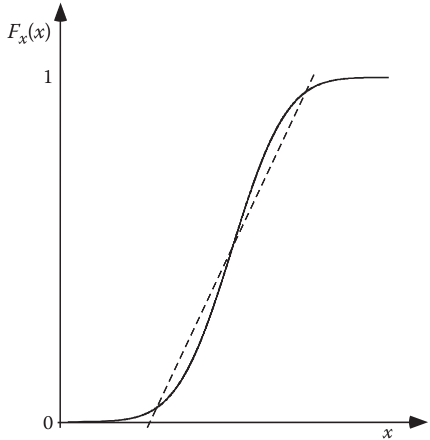

Figure 2.20 The S-shaped CDF for a normal random variable.

002x020.eps

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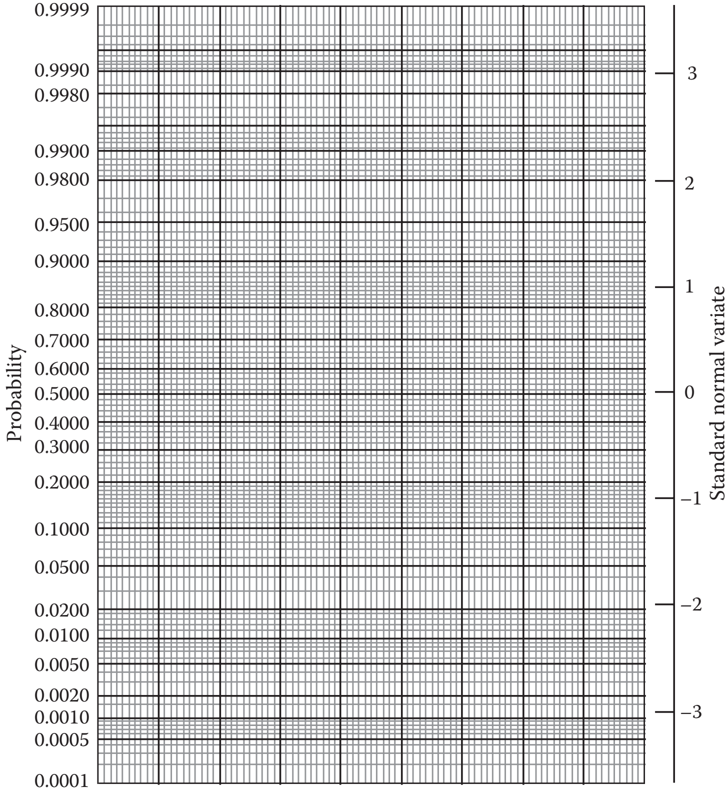

Figure 2.21 Example of normal probability paper.

002x021.eps

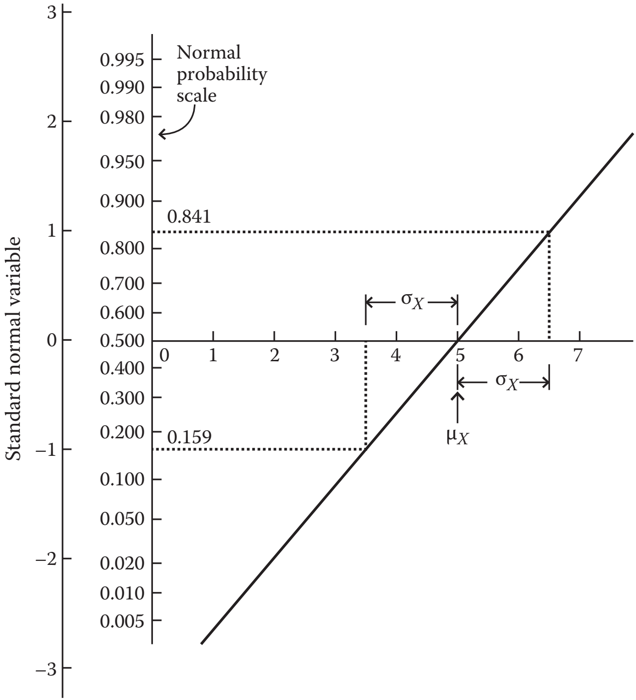

Figure 2.22 Interpretation of a straight line plot on normal probability paper in terms of the mean and standard deviation of the normal random variable.

002x022.eps

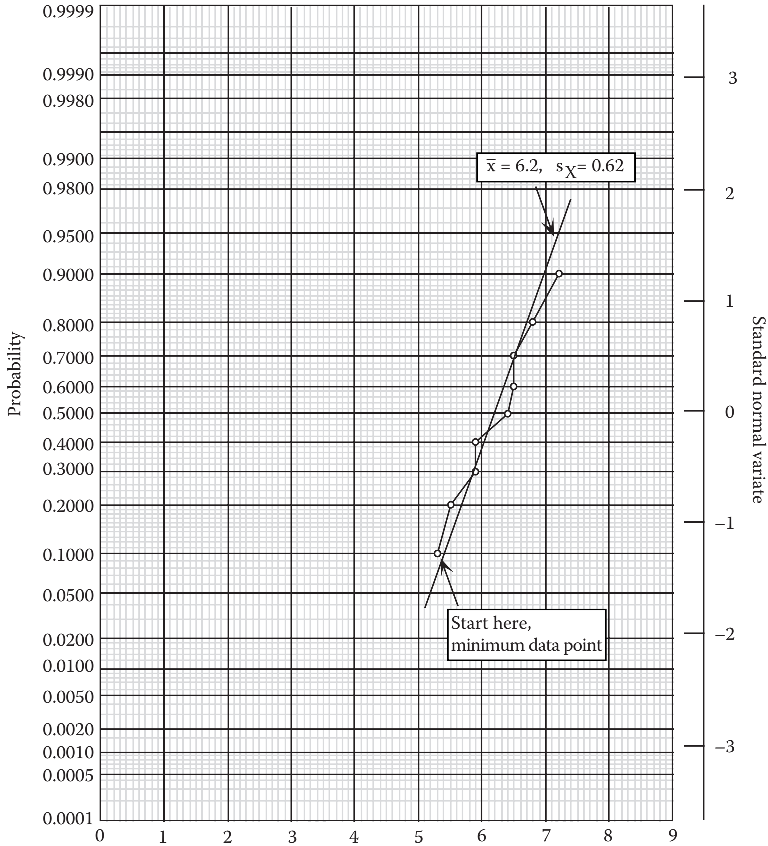

Figure 2.23 Data from Example 2.7 plotted on normal probability paper.

002x023.eps

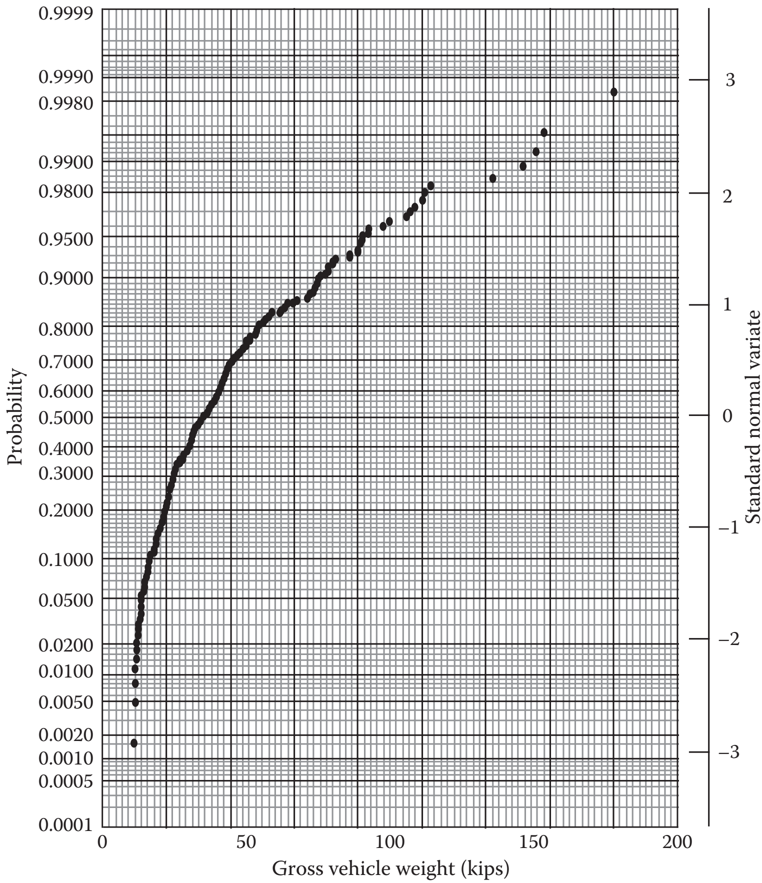

Figure 2.24 Observed data on GVW plotted on normal probability paper (1 kip = 4.448 kN).

002x024.eps

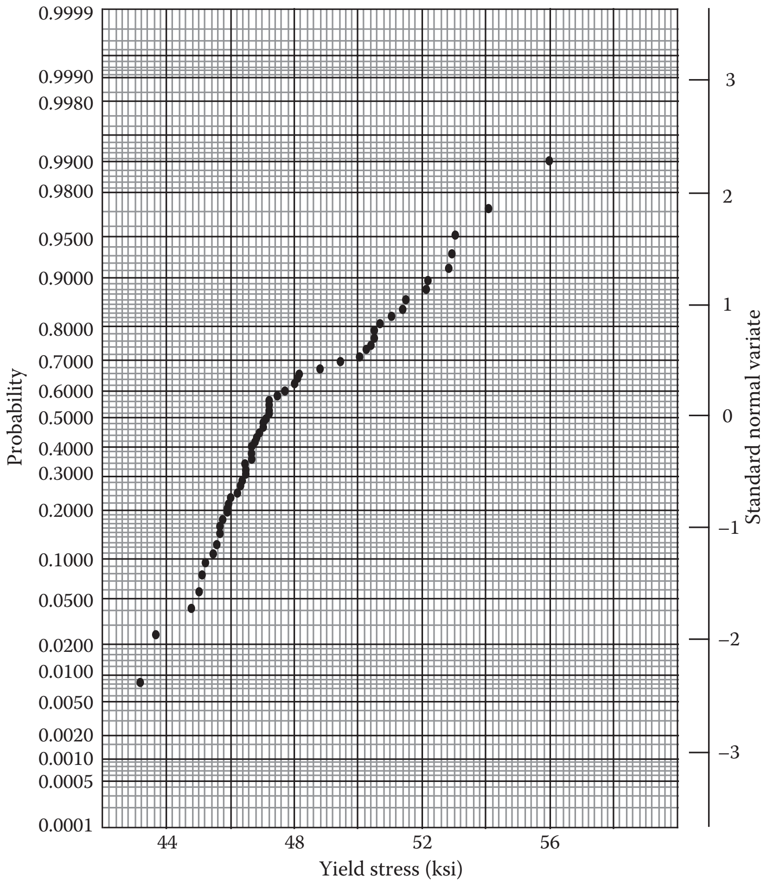

Figure 2.25 Test results of yield stress of steel on commercial normal probability paper.

002x025.eps

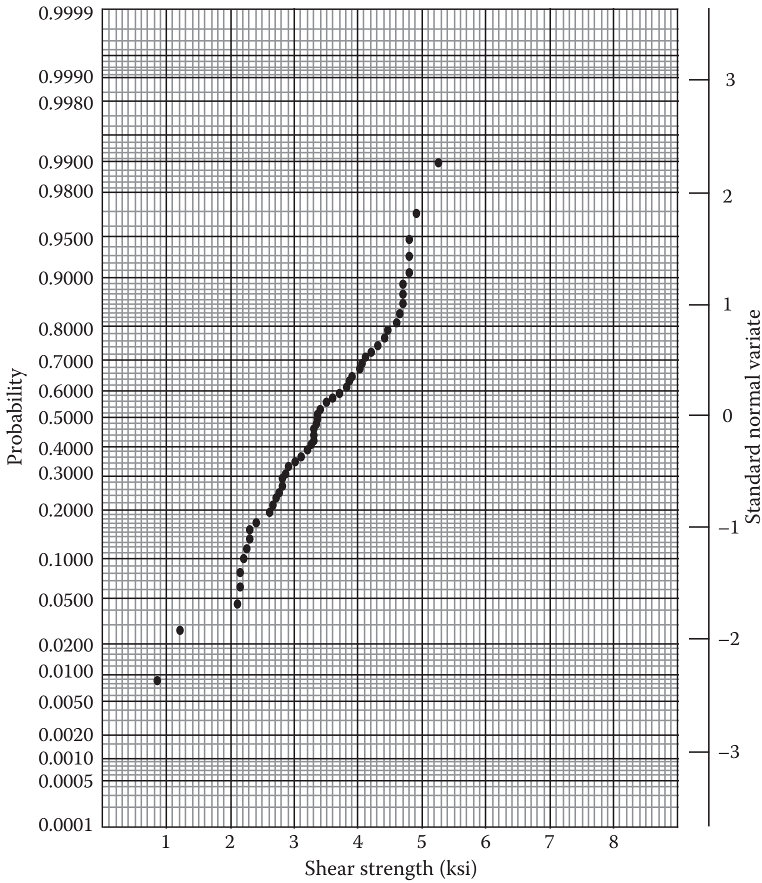

Figure 2.26 Test results of shear strength of spot welds on normal probability paper.

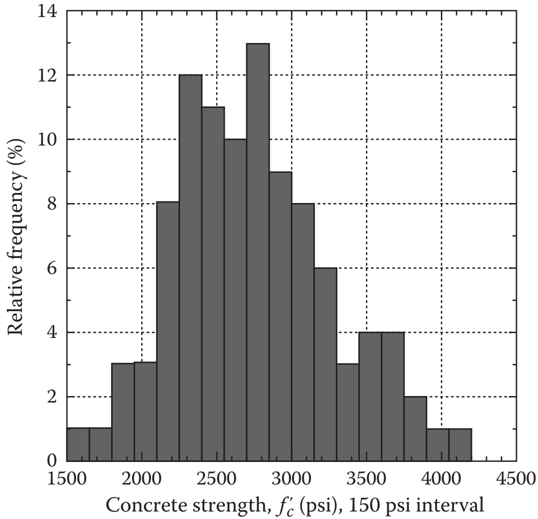

Figure 2.27 Relative frequency histogram for concrete strength (Example 2.9).

002x027.eps

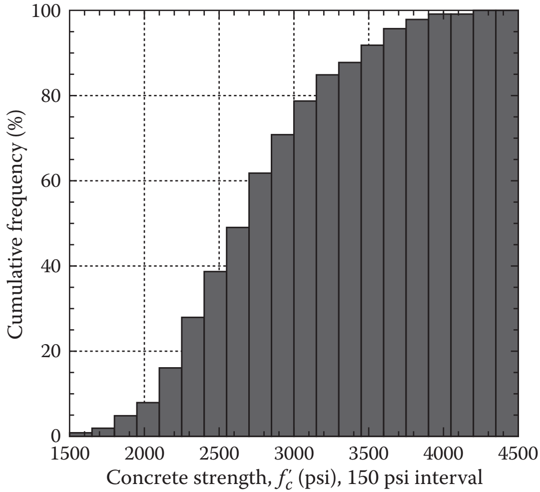

Figure 2.28 Cumulative frequency histogram for concrete strength (Example 2.9).

002x028.eps

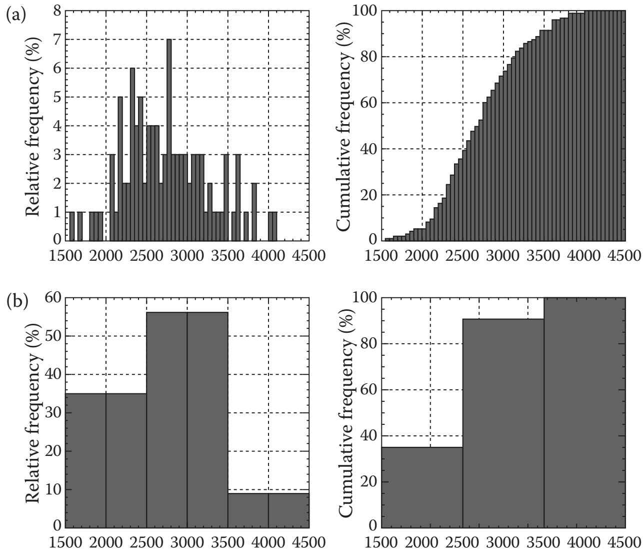

Figure 2.29 Influence of interval size on appearance of histogram (Example 2.9) (a) for interval of 50 psi and (b) for interval of 1000 psi.

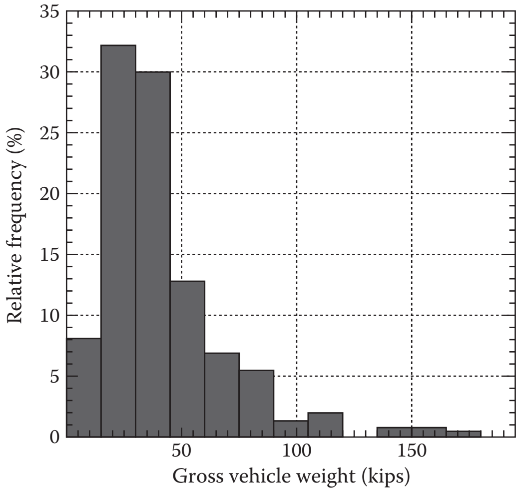

Figure 2.30 Relative frequency histogram for data in Table 2.4 (Example 2.10).

002x030.eps

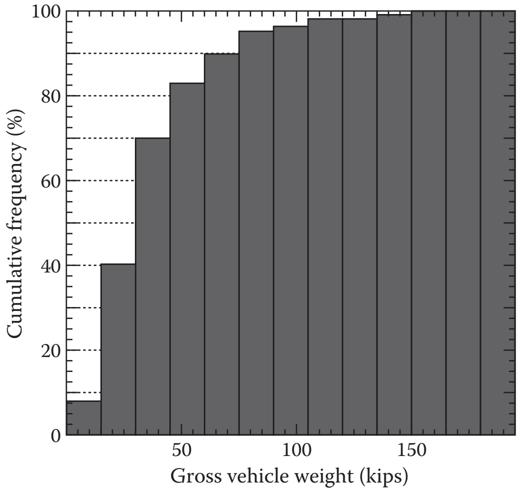

Figure 2.31 Cumulative frequency histogram for data in Table 2.4 (Example 2.10).

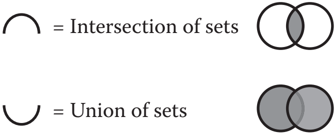

Figure 2.32 A Venn diagram showing the difference between the intersection and union of events.

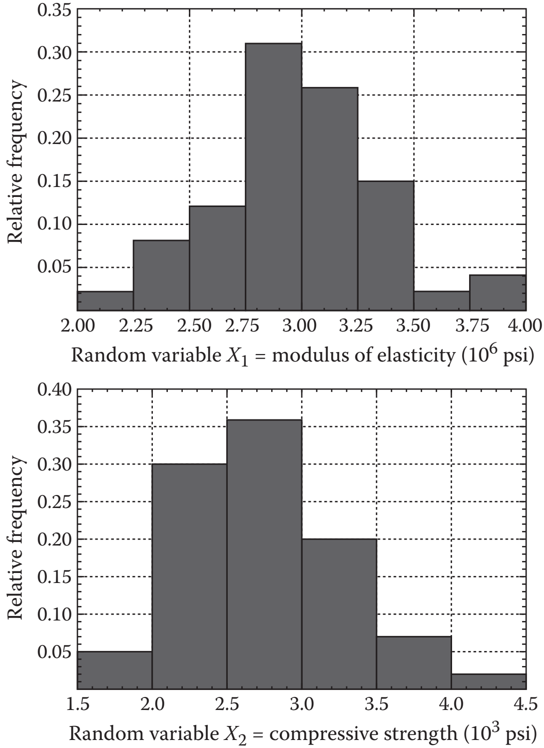

Figure 2.33 Relative frequency histograms for X_1 and X_2 considered independently.

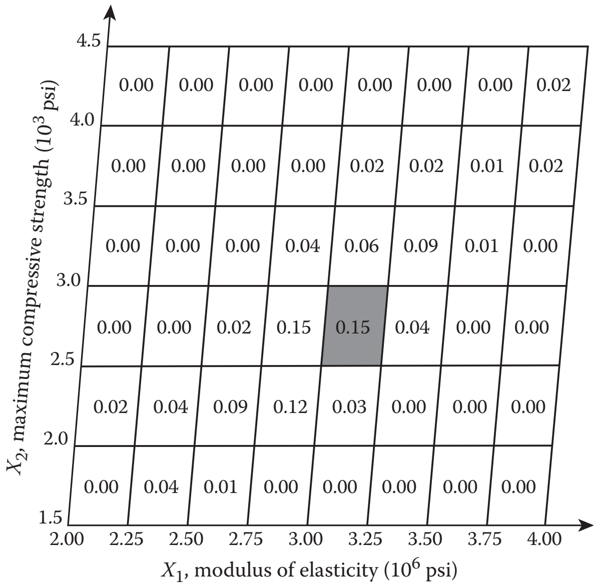

Figure 2.34 Relative frequency histogram for both X_1 and X_2.

002x034.eps

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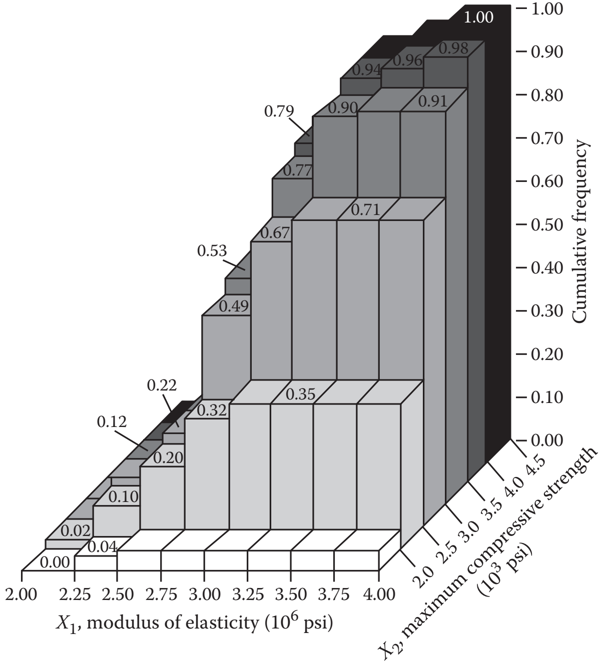

Figure 2.35 Cumulative frequency histogram for both X_1 and X_2.

002x035.eps

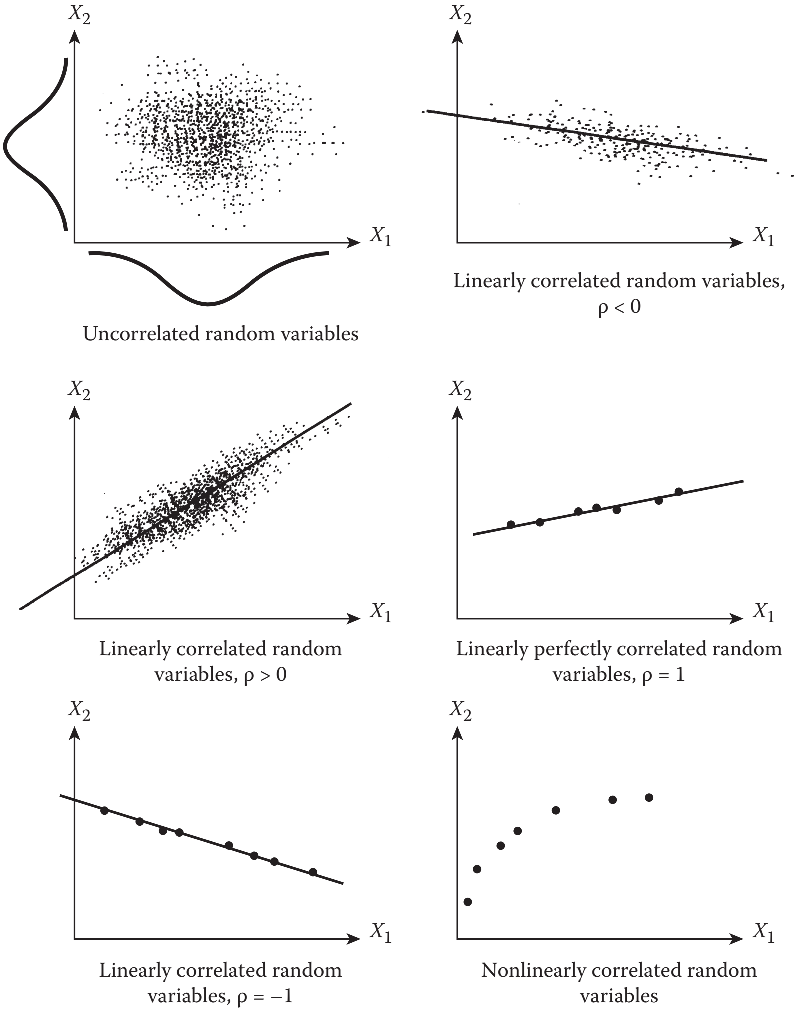

Figure 2.36 Examples of correlated and uncorrelated random variables.