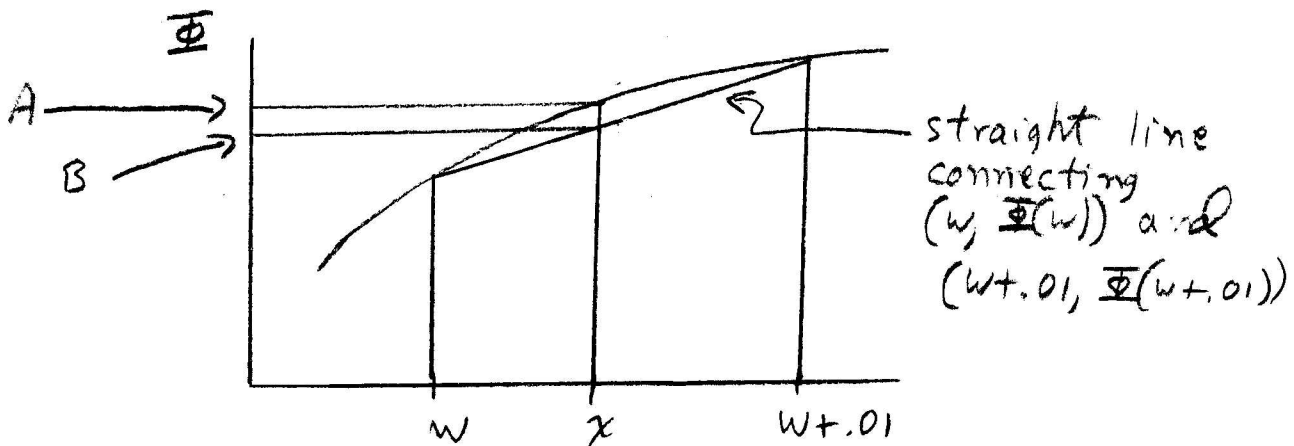


Interpolating $\Phi(x)$ for $0 < x < 3.49$ Not in Table 5.1

Table 5.1 on p 222 of Ross gives $\Phi(x)$ for $0 \leq x \leq 3.49$ in increments of .01. In order to approximate $\Phi(x)$ for $0 < x < 3.49$ not in the table, we use the following procedure. Choose $0 \leq w \leq 3.49$ such that $w < x < w + .01$ and w appears in the table. Then

$$\Phi(x) \approx \Phi(w) + \frac{x-w}{.01} \cdot (\Phi(w+.01) - \Phi(w))$$



$$A = \Phi(x) = \frac{1}{\sqrt{2\pi}} \int_{-\infty}^x e^{-y^2/2} dy$$

$$B = \Phi(w) + \frac{x-w}{.01} \cdot (\Phi(w+.01) - \Phi(w))$$

Example. $\Phi(1.6667) = \Phi(1.66 + .0067)$

$$\approx \Phi(1.66) + \frac{.0067}{.01} (\Phi(1.67) - \Phi(1.66))$$

$$= .9515 + .67 (.9525 - .9515)$$

$$\approx .9522$$