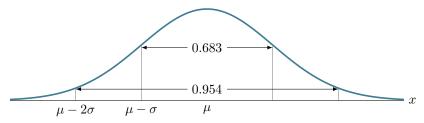
## Cumulative distribution function (CDF) of the normal distribution



| $\Delta x$                                | 0.00            | 0.01            | 0.02            | 0.03            | 0.04            | 0.05            | 0.06            | 0.07            | 0.08            | 0.09            |
|---|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| 0.0                                       | 0.5000          | 0.5040          | 0.5080          | 0.5120          | 0.5160          | 0.5199          | 0.5239          | 0.5279          | 0.5319          | 0.5359          |
| 0.1                                       | 0.5398          | 0.5438          | 0.5478          | 0.5517          | 0.5557          | 0.5596          | 0.5636          | 0.5675          | 0.5714          | 0.5753          |
| 0.2                                       | 0.5793          | 0.5832          | 0.5871          | 0.5910          | 0.5948          | 0.5987          | 0.6026          | 0.6064          | 0.6103          | 0.6141          |
| 0.3                                       | 0.6179          | 0.6217          | 0.6255          | 0.6293          | 0.6331          | 0.6368          | 0.6406          | 0.6443          | 0.6480          | 0.6517          |
| <b>0.4</b>                                | 0.6554          | 0.6591          | 0.6628          | 0.6664          | 0.6700          | 0.6736          | 0.6772          | 0.6808          | 0.6844          | 0.6879          |
| 0.5                                       | 0.6915          | 0.6950          | 0.6985          | 0.7019          | 0.7054          | 0.7088          | 0.7123          | 0.7157          | 0.7190          | 0.7224          |
| 0.6                                       | 0.7257          | 0.7291          | 0.7324          | 0.7357          | 0.7389          | 0.7422          | 0.7454          | 0.7486          | 0.7517          | 0.7549          |
| 0.7                                       | 0.7580          | 0.7611          | 0.7642          | 0.7673          | 0.7704          | 0.7734          | 0.7764          | 0.7794          | 0.7823          | 0.7852          |
| 0.8                                       | 0.7881          | 0.7910          | 0.7939          | 0.7967          | 0.7995          | 0.8023          | 0.8051          | 0.8078          | 0.8106          | 0.8133          |
| 0.9                                       | 0.8159          | 0.8186          | 0.8212          | 0.8238          | 0.8264          | 0.8289          | 0.8315          | 0.8340          | 0.8365          | 0.8389          |
| 1.0                                       | 0.8413          | 0.8438          | 0.8461          | 0.8485          | 0.8508          | 0.8531          | 0.8554          | 0.8577          | 0.8599          | 0.8621          |
| 1.1                                       | 0.8643          | 0.8665          | 0.8686          | 0.8708          | 0.8729          | 0.8749          | 0.8770          | 0.8790          | 0.8810          | 0.8830          |
| 1.2                                       | 0.8849          | 0.8869          | 0.8888          | 0.8907          | 0.8925          | 0.8944          | 0.8962          | 0.8980          | 0.8997          | 0.9015          |
| 1.3                                       | 0.9032          | 0.9049          | 0.9066          | 0.9082          | 0.9099          | 0.9115          | 0.9131          | 0.9147          | 0.9162          | 0.9177          |
| 1.4                                       | 0.9192          | 0.9207          | 0.9222          | 0.9236          | 0.9251          | 0.9265          | 0.9279          | 0.9292          | 0.9306          | 0.9319          |
| 1.5                                       | 0.9332          | 0.9345          | 0.9357          | 0.9370          | 0.9382          | 0.9394          | 0.9406          | 0.9418          | 0.9429          | 0.9441          |
| 1.6                                       | 0.9452          | 0.9463          | 0.9474          | 0.9484          | 0.9495          | 0.9505          | 0.9515          | 0.9525          | 0.9535          | 0.9545          |
| 1.7                                       | 0.9554          | 0.9564          | 0.9573          | 0.9582          | 0.9591          | 0.9599          | 0.9608          | 0.9616          | 0.9625          | 0.9633          |
| 1.8                                       | 0.9641          | 0.9649          | 0.9656          | 0.9664          | 0.9671          | 0.9678          | 0.9686          | 0.9693          | 0.9699          | 0.9706          |
| 1.9                                       | 0.9713          | 0.9719          | 0.9726          | 0.9732          | 0.9738          | 0.9744          | 0.9750          | 0.9756          | 0.9761          | 0.9767          |
| $\begin{array}{c} 2.0 \\ 2.1 \end{array}$ | 0.9772 $0.9821$ | 0.9778 $0.9826$ | 0.9783 $0.9830$ | 0.9788 $0.9834$ | 0.9793 $0.9838$ | 0.9798 $0.9842$ | 0.9803 $0.9846$ | 0.9808 $0.9850$ | 0.9812 $0.9854$ | 0.9817 $0.9857$ |
| 2.1 $2.2$                                 | 0.9821 $0.9861$ | 0.9820 $0.9864$ | 0.9868          | 0.9854 $0.9871$ | 0.9858 $0.9875$ | 0.9842 $0.9878$ | 0.9840 $0.9881$ | 0.9884          | 0.9854 $0.9887$ | 0.9890          |
| 2.2 $2.3$                                 | 0.9893          | 0.9896          | 0.9898          | 0.9871 $0.9901$ | 0.9873 $0.9904$ | 0.9906          | 0.9801 $0.9909$ | 0.9864 $0.9911$ | 0.9867 $0.9913$ | 0.9890 $0.9916$ |
| 2.3 $2.4$                                 | 0.9893 $0.9918$ | 0.9890 $0.9920$ | 0.9898 $0.9922$ | 0.9901 $0.9925$ | 0.9904 $0.9927$ | 0.9900          | 0.9909 $0.9931$ | 0.9911 $0.9932$ | 0.9913 $0.9934$ | 0.9910 $0.9936$ |
| 2.5                                       | 0.9938          | 0.9940          | 0.9941          | 0.9943          | 0.9945          | 0.9946          | 0.9948          | 0.9949          | 0.9951          | 0.9952          |
| 2.6                                       | 0.9953          | 0.9955          | 0.9956          | 0.9957          | 0.9959          | 0.9960          | 0.9961          | 0.9962          | 0.9963          | 0.9964          |
| 2.7                                       | 0.9965          | 0.9966          | 0.9967          | 0.9968          | 0.9969          | 0.9970          | 0.9971          | 0.9972          | 0.9973          | 0.9974          |
| 2.8                                       | 0.9974          | 0.9975          | 0.9976          | 0.9977          | 0.9977          | 0.9978          | 0.9979          | 0.9979          | 0.9980          | 0.9981          |
| 2.9                                       | 0.9981          | 0.9982          | 0.9982          | 0.9983          | 0.9984          | 0.9984          | 0.9985          | 0.9985          | 0.9986          | 0.9986          |
| 3.0                                       | 0.9987          | 0.9987          | 0.9987          | 0.9988          | 0.9988          | 0.9989          | 0.9989          | 0.9989          | 0.9990          | 0.9990          |
| 3.1                                       | 0.9990          | 0.9991          | 0.9991          | 0.9991          | 0.9992          | 0.9992          | 0.9992          | 0.9992          | 0.9993          | 0.9993          |
| 3.2                                       | 0.9993          | 0.9993          | 0.9994          | 0.9994          | 0.9994          | 0.9994          | 0.9994          | 0.9995          | 0.9995          | 0.9995          |
| 3.3                                       | 0.9995          | 0.9995          | 0.9995          | 0.9996          | 0.9996          | 0.9996          | 0.9996          | 0.9996          | 0.9996          | 0.9997          |
| 3.4                                       | 0.9997          | 0.9997          | 0.9997          | 0.9997          | 0.9997          | 0.9997          | 0.9997          | 0.9997          | 0.9997          | 0.9998          |
| 3.5                                       | 0.9998          | 0.9998          | 0.9998          | 0.9998          | 0.9998          | 0.9998          | 0.9998          | 0.9998          | 0.9998          | 0.9998          |
| 3.6                                       | 0.9998          | 0.9998          | 0.9999          | 0.9999          | 0.9999          | 0.9999          | 0.9999          | 0.9999          | 0.9999          | 0.9999          |
| 3.7                                       | 0.9999          | 0.9999          | 0.9999          | 0.9999          | 0.9999          | 0.9999          | 0.9999          | 0.9999          | 0.9999          | 0.9999          |
| 3.8                                       | 0.9999          | 0.9999          | 0.9999          | 0.9999          | 0.9999          | 0.9999          | 0.9999          | 0.9999          | 0.9999          | 0.9999          |
| 3.9                                       | 1.0000          | 1.0000          | 1.0000          | 1.0000          | 1.0000          | 1.0000          | 1.0000          | 1.0000          | 1.0000          | 1.0000          |

Table 1: Approximations of  $\Phi_{0;1}(x + \Delta x)$ 

$$\Phi_{0;1}(x) = \int_{-\infty}^{x} e^{-t^2/2} dt$$

$$\Phi_{0;1}(1.65) \approx 0.9505$$

$$\Phi_{\mu;\sigma^2}(x) = \Phi_{0;1}\left(\frac{x-\mu}{\sigma}\right)$$

$$\Phi_{0;1}(-x) = 1 - \Phi_{0;1}(x)$$