$$P(M_3 > 5) = 2\,P(B_3 > 5)$$

$$= 2\int_5^{\infty} \text{NORMAL}(x; 0, 3)\,dx$$

$$= 2\,(1 - \text{pnorm}(5;\ 0,\ \text{SQRT}(3))) = 0.00389$$

$$P(M_4 \le 4) = 0.9 \iff P(M_4 > 4) = 0.1 \iff 2P(B_4 > 4) = 0.1$$

$$\iff P(B_4 > 4) = 0.05 \iff P\left(B_4 > \frac{4}{\sqrt{4}}\right) = 0.05$$

$$\frac{4}{\sqrt{4}} = \psi^{-1}(0.95) \qquad \psi(t) = \int_0^t \text{NORMAL}(x; 0, 1)\,dx$$

$$4 = \left(\frac{4}{\psi^{-1}(0.95)}\right)^2 \qquad = \left(\frac{4}{\text{QNORM}(0.95, 0, 1)}\right)^2 = \underline{5.91}$$