Bivariate normal distribution

$$f(x) = \frac{1}{\sqrt{(2\pi)^n \det(\Sigma_X)}} \exp\left(-\tfrac{1}{2}(x-\mu)^T \Sigma_X^{-1}(x-\mu)\right)$$

with $\mu = \begin{pmatrix} 0 \\ 0 \end{pmatrix}$, $\Sigma_X = \begin{pmatrix} 3 & 2 \\ 2 & 3 \end{pmatrix}$