Salamin - Brent Algorithm
initial values: $a_{0}=1, \quad b_{0}=\frac{1}{\sqrt{2}}, \quad s_{0}=\frac{1}{2}$
Repeat: $\quad a_{1}=\frac{a_{0}+b_{0}}{2}=\frac{1+\frac{1}{\sqrt{2}}}{2}$

$$
\begin{aligned}
& \text { iteration }\left(\begin{array}{l}
b_{1}=\sqrt{a_{0} b_{0}}=\sqrt{1 \cdot \frac{1}{\sqrt{2}}}=\sqrt{\frac{1}{\sqrt{2}}} \\
s_{1}=\frac{1}{2}-2^{\prime}\left(a_{1}^{2}-b_{1}^{2}\right)=\sqrt{\frac{1}{2}-2\left(\left(\frac{1+\frac{1}{\sqrt{2}}}{2}\right)^{2}-\left(\sqrt{\frac{1}{\sqrt{2}}}\right)^{2}\right)} \\
p_{1}=\frac{2 a_{1}^{2}}{s_{1}}=\frac{2\left(\frac{1+\frac{1}{\sqrt{2}}}{2}\right)^{2}}{s_{1}}=3,187 \ldots
\end{array}\right) \\
& \begin{array}{l}
\text { iteration } \\
2\left(\begin{array}{l}
a_{2}=\cdots \\
b_{2}=\ldots \\
s_{2}=\cdots
\end{array} \quad p_{2}=\cdots\right.
\end{array}
\end{aligned}
$$

