For $a, b > 0$:

$$\begin{aligned}
\sqrt{a}\sqrt{b} &= \sqrt{ab} \\
\left(\sqrt{a}\sqrt{b}\right)^2 &= \sqrt{a}\sqrt{a}\sqrt{b}\sqrt{b} \\
&= ab \\
\therefore \sqrt{ab} &= \sqrt{a}\sqrt{b}
\end{aligned}$$

$$\begin{aligned}
\frac{\sqrt{a}}{\sqrt{b}} &= \sqrt{\frac{a}{b}} \\
\left(\frac{\sqrt{a}}{\sqrt{b}}\right)^2 &= \frac{a}{b} \\
\therefore \sqrt{\frac{a}{b}} &= \frac{\sqrt{a}}{\sqrt{b}}
\end{aligned}$$