

$$\begin{aligned}
 5(i) \quad & \frac{1}{\sqrt{7}} \\
 &= \frac{1}{\sqrt{7}} \times \frac{\sqrt{7}}{\sqrt{7}} \\
 &= \frac{\sqrt{7}}{\sqrt{7 \times 7}} \\
 &= \frac{\sqrt{7}}{7}
 \end{aligned}$$

$$\begin{aligned}
 5(ii) \quad & \frac{1}{\sqrt{7}-2} \\
 &= \frac{1}{\sqrt{7}-2} \times \frac{\sqrt{7}+2}{\sqrt{7}+2} \\
 &= \frac{\sqrt{7}+2}{(\sqrt{7})^2 - 2^2} \\
 &= \frac{\sqrt{7}+2}{7-2} \\
 &= \frac{\sqrt{7}+2}{5}
 \end{aligned}$$

$$\begin{aligned}
 5(iii) \quad & \frac{1}{\sqrt{7}-\sqrt{6}} \\
 &= \frac{1}{\sqrt{7}-\sqrt{6}} \times \frac{\sqrt{7}+\sqrt{6}}{\sqrt{7}+\sqrt{6}} \\
 &= \frac{\sqrt{7}+\sqrt{6}}{(\sqrt{7})^2 - (\sqrt{6})^2} \\
 &= \frac{\sqrt{7}+\sqrt{6}}{7-6} \\
 &= \frac{\sqrt{7}+\sqrt{6}}{1}
 \end{aligned}$$

$$\begin{aligned}
 5(iv) \quad & \frac{1}{\sqrt{5}+\sqrt{2}} \\
 &= \frac{1}{\sqrt{5}+\sqrt{2}} \times \frac{\sqrt{5}-\sqrt{2}}{\sqrt{5}-\sqrt{2}} \\
 &= \frac{\sqrt{5}-\sqrt{2}}{(\sqrt{5})^2 - (\sqrt{2})^2} \\
 &= \frac{\sqrt{5}-\sqrt{2}}{5-2} \\
 &= \frac{\sqrt{5}-\sqrt{2}}{3}
 \end{aligned}$$