$$
\begin{aligned}
A &= \begin{pmatrix} \frac{4}{3} & 7 \\ -\frac{1}{3} & -2 \end{pmatrix} \\
A - \lambda I &= \begin{pmatrix} \frac{4}{3} - \lambda & 7 \\ -\frac{1}{3} & -2 - \lambda \end{pmatrix} \\
\det A - \lambda I &= (\frac{4}{3} - \lambda)(-2 - \lambda) - 7(-\frac{1}{3}) \\
&= -\frac{8}{3} - \frac{4}{3}\lambda + 2\lambda + \lambda^2 + \frac{7}{3} \\
&= \lambda^2 + \frac{2}{3}\lambda - \frac{1}{3}
\end{aligned}
$$

$$
\begin{aligned}
0 &= \det A - \lambda I \\
0 &= \lambda^2 + \frac{2}{3}\lambda - \frac{1}{3} \\
\lambda &= \frac{-\frac{2}{3} \pm \sqrt{\frac{4}{9} + 4 \cdot \frac{1}{3}}}{2} \\
&= \frac{-\frac{2}{3} \pm \sqrt{\frac{16}{9}}}{2} \\
&= \frac{-\frac{2}{3} \pm \frac{4}{3}}{2} \\
\lambda &\in \left\{ \frac{1}{3}, -1 \right\}
\end{aligned}
$$