Step-1

This splitting is achieved as follows:

$$\begin{aligned} Ax &= b \\ \left(I-\left(I-A\right)\right)x &= b \\ Ix-\left(I-A\right)x &= b \end{aligned}$$

$$\begin{aligned} Ix &= \left(I-A\right)x+b \\ x &= \left(I-A\right)x+b \end{aligned}$$

Step-2

Therefore, for this splitting, we get

$$\begin{aligned} A &= S-T \\ &= I-\left(I-A\right) \end{aligned}$$

This gives, $S=I$, $T=I-A$

Step-3

Consider $S^{-1}T$. Since S is the identity matrix, $S^{-1}=I^{-1}$. But the inverse of the identity matrix is the identity matrix itself.

Therefore, $S^{-1}=I$.

This gives the following:

$$\begin{aligned} S^{-1}T &= I^{-1}\left(I-A\right) \\ &= I\left(I-A\right) \\ &= I-A \end{aligned}$$

Step-4

Thus, we have $\boxed{S=I}$, $\boxed{T=I-A}$, and $\boxed{S^{-1}T=I-A}$.