The trick here is to back up and first try problem 13b on page 162. I look at only one space. The column space of A is the same as the column space of $-A$. Why?

Let $\mathbf{v}$ be an element of the column space of A. Then $\mathbf{v}$ is a linear combination of the columns of A. Let

$$A = [\mathbf{a}_1 \ \mathbf{a}_2 \ \ldots \ \mathbf{a}_n].$$

Of course, this means that

$$-A = [-\mathbf{a}_1 \ -\mathbf{a}_2 \ \ldots \ -\mathbf{a}_n].$$

Because $\mathbf{v}$ is in the column space of A, we can write

$$\mathbf{v} = x_1\mathbf{a}_1 + x_2\mathbf{a}_2 + \cdots + x_n\mathbf{a}_n.$$

However, this can be manipulated so that $\mathbf{v}$ is in the column space of $-A$.

$$\begin{aligned} \mathbf{v} &= x_1\mathbf{a}_1 + x_2\mathbf{a}_2 + \cdots + x_n\mathbf{a}_n \\ &= (-x_1)(-\mathbf{a}_1) + (-x_2)(-\mathbf{a}_2) + \cdots + (-x_n)(-\mathbf{a}_n) \end{aligned}$$

Thus, $\mathbf{v}$ is a linear combination of the columns of $-A$ and is therefore in the column space of $-A$. Therefore, everything that lies in the column space of A also lies in the column space of $-A$. That is, $C(A) \subset C(-A)$.

In a similar manner, show that the column space of $-A$ is contained in the column space of A. Start with an arbitrary linear combination of the columns of $-A$ and show that it is also a linear combination of the columns of A. Then, you have $C(-A) \subset C(A)$.

The conclusion of these two ideas is the fact that $C(A) = C(-A)$.

With this exercise 13 completed, exercise 25d is a no-brainer. If $A^T = -A$, then

$$C(A^T) = C(-A) = C(A).$$

Done.