All answers must be justified appropriately.

From TREIL do problems:

> page 85: 3.3.3,
> 3.3.4 (where you need to assume that $-1 \neq 1$ in the field $\mathbb{F}$),
> 3.3.5, 3.3.6, 3.3.7
> page 94: 3.5.2, 3.5.3 (HINT: Do the cases $n = 1, 2$ by hand. This should suggest to you
> what the general answer is and also initializes a proof using induction.)
> page 96: 3.7.1: In parts b) through j) assume that the matrices being discussed are square. None of
> these should depend on the precise field $\mathbb{F}$ used, except that in part (g) you should assume that $-1 \neq 1$ in
> the field $\mathbb{F}$.