Exercises 27: 2, 4[1], 5, 19, 24, 30, 34-38

Exercises 29: 1-3

Additional exercises:

1. Prove that every field F has a subfield which is isomorphic (as a field) to $\mathbb{Z}_p$ or $\mathbb{Q}$. Hint: First, use the characteristic of F to determine which will occur. To prove F has a subfield isomorphic to $\mathbb{Q}$, first find a subring that is isomorphic to $\mathbb{Z}$, and then use what you know about the field of fractions of $\mathbb{Z}$ to conclude that F must have a subfield isomorphic to $\mathbb{Q}$.

[1]For this problem, use what you proved in Additional Exercises #2 and #3 from Homework#11