1.) Use the Smith Normal Form to determine the isomorphism class of the abelian group which is generated by distinct elements \(m_1, m_2, m_3\) satisfying \(7m_1 - 2m_2 + 3m_3 = 0\) and \(2m_1 + 5m_2 - 2m_3 = 0\).

2.) Prove that if \(V\) is a finite dimensional vector space and \(U, W\) are subspaces of \(V\) such that \(\dim U + \dim W = \dim V + m\) for some natural number \(m\), then \(\dim U \cap W \geq m\).

3.) Fulton p. 19, #2.7.

4.) Fulton p. 19, #2.12.

5.) Fulton p. 23, #2.24.

6.) Fulton p. 23, #2.30.

7.) Fulton p. 29, #2.50.

8.) Dummit and Foote, p. 746, #3.

(Values in Spec\(R\))