Math 9 Fall 19 Homework 2 (Due on Oct 2 before class)

(1) (2 pts each) Linear algebra 2.1.9 (c)(d)

(2) (2 pts each) Linear algebra 2.1.10 (d)(e)

(3) (3 pts) True or False:

$$\text{span}(\{< 1, 1, 2 >, < 2, 1, 3 >\}) = \text{span}(\{< 3, 2, 5 >, < -1, 0, -1 >\}).$$

(Hint: You may want to check whether the set formed by these four vectors is coplanar)

(4) (4 pts) Find a basis for the subspace

$$\mathcal{S} = \text{span}(\{< 1, 1, 2 >, < 2, 1, 3 >, < 3, 2, 5 >\}).$$

Can you find a basis for the same subspace $\mathcal{S}$ that does not contain the vectors $< 1, 1, 2 >$, $< 2, 1, 3 >$, or $< 3, 2, 5 >$?

(5) (3 pts) Linear Algebra 2.2.3 (b)

(6) (3 pts) Linear Algebra 2.3.8 (f)