MAT347Y1 HW12 Marking Scheme

Friday, January 22

Total: 21 points.

7.4.15:

(a) 3 points. You need to conclude that (2) $\overline{0}$, $\overline{1}$, $\overline{x}$, and $\overline{x+1}$ give all possible elements of $\overline{E}$, and (1) that they are distinct.

(b) 2 points.

(c) 2 points.

7.6.4: 3 points (you need to use the fact that both rings are nonzero - the statement is false if one ring is allowed to be the zero ring)

Handout #4: 4 points.

Handout #6: 3 points. ($x^3 \mid x^2 \cdot x^2$ won't work, because x^4 is not a multiple of x^3 in S)

Handout #7: 4 points. Note that only *nonzero non-units* can be factored into irreducibles. Supposing $p \mid ab$, you need to consider what happens when one of a or b is zero or a unit.