Math 647 exercise sheet 6

While I’m away, please do the following:

I. Read: Introduction, section 7; pages 59–60 on weak direct products of infinitely many Abelian groups; chapter 2, section 1.

II. Then attempt: introduction, section 7, question 6; chapter 2, section 1, questions 9,10,12. (Note question 12 is particularly important: we defined the rank of a free group as the cardinality of any set $X$ that it is free on. We were unable at that time to prove that rank was well-defined. That is, it could have been possible that $G$ was free on sets $X$ and $Y$ with the same cardinality. Question 12 shows that rank of free groups is well-defined, as a consequence of the fact that rank of free Abelian groups is well-defined.)

III. Read sections 2 and 3 from chapter 2.

(We will cover the material in these sections shortly in class – but in a slightly more general context. You will find it helpful as we go to compare the results with the ones from these sections 2 and 3 as we move along...)

IV. Finally, do the following questions from chapter 3:

Section 1: 2,8,11,12,17.
Section 2: 1,2,13,17,19,20,21.

I will collect this work on the Wednesday before Thanksgiving!

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