On Wednesday, April 18, there will be an in-class quiz consisting of three problems, based on homeworks 1 and 2 (excluding last week’s challenge problem). You may use your solutions to homework 2 as a cheat sheet. You will turn in both the homework and the quiz at the end of class.

(1) Artin, chapter 10, exercise 4.1.
(2) Artin, chapter 10, exercise 4.3(a,d,e).
(3) Artin, chapter 10, exercise 4.8.
(4) Artin, chapter 10, exercise 4.10.
(5) Artin, chapter 10, exercise 5.1.
(6) Artin, chapter 10, exercise 5.5.
(7) Artin, chapter 10, exercise 5.6.
(8) Artin, chapter 10, exercise 6.2.
(9) Artin, chapter 10, exercise 6.4(a,c).
(10) Optional: read the Wikipedia description of the tensor product of two vector spaces. Then use this to show that for any finite group $G$, if $\chi_1, \chi_2$ are two characters of $G$, then the function $\chi = \chi_1 \chi_2$ (that is, the function defined by $\chi(g) = \chi_1(g)\chi_2(g)$) is again a character of $G$. This can be useful for the computation of character tables!