

**MATHEMATICAL MODELING 2012**  
**EXERCISES 10-12**

10. Show that learning by the predator how to efficiently catch a prey can produce a Holling-3 functional response. (See page 41 of the lecture notes of 14-02-2012 for details.)
11. Derive the functional response if predators not only catch prey themselves, but also now and then try to steal already captured prey from fellow predators. (See middle of page 42 of the lecture notes of 14-02-2012 for details.)
12. Derive the functional response if prey help fellow prey that have been captured but are still alive to escape. (See bottom of page 42 of the lecture notes of 14-02-2012 for details.)