18.726 Problem Set 5, due Thursday, March 10

Please submit *six* of the following problems, including all problems marked "Required".

1. Hartshorne II.5.1.

2. Hartshorne II.5.3 (the adjoint property for the functor turning modules over a ring into quasi-coherent sheaves).

3. Hartshorne II.5.4 (note especially the final comment).

4. (Required) Hartshorne II.5.7. Beware: a locally free coherent sheaf is not free on *every* affine, only in a neighborhood of each point.

5. Hartshorne II.5.8.

6. Hartshorne II.5.12 or II.5.13 (but don't submit both).

7. Hartshorne II.5.16 (make sure you read this even if you don't work out all the details).

8. Hartshorne II.5.17.

9. (Required) Hartshorne II.5.18.

10. Hartshorne II.7.1.

11. Hartshorne II.7.2.