

This is a list of definitions, propositions and theorems that you might be asked to state in the Final Exam. You will need to know the names stated here and the corresponding statements from the textbook.

This list is only compiled to let you know which theorems, propositions and definition you might be asked to state precisely. Of course, you will have to utilize other material on the final exam.

1. Definition of a regular surface. (Section 2.2).
2. Definition 2 (Critical/regular points/values of a map) in Section 2.2.
3. Proposition 2 in Section 2.2 (the Regular Value Theorem)
4. Propositions 1 and 3 in Section 2.2 that state that the graph of a differentiable function is a regular surface, and conversely a neighborhood of a point in a regular surface is the graph of some function.
5. Proposition 1 (Change of Parameters) in Section 2.3.
6. Definition 1 in Section 2.3. (Differentiability of $f : V \subset S \rightarrow \mathbb{R}$.)
7. Definition 1 (The first fundamental form) in Section 2.5.
8. Definition 1 (The Gauss map) in Section 3.2.
9. Definition 2 (The second fundamental form) in Section 3.2.
10. Definition 4 (The principal curvatures and the principal directions) in Section 3.2.
11. Definition 6 (The Gaussian curvature and the mean curvature) in Section 3.2.
12. Definition 7 in Section 3.2
13. Definition 1 (Isometry) in Section 4.2.
14. The first part of Definition 3 (Conformal map) in Section 4.2. The definition of a map $\varphi : S \rightarrow \bar{S}$ to be a conformal map is enough. You don't need to know the rest of the definitions contained here.
15. Theorema Egregium in Section 4.3.
16. Corollary 2 (Gauss-Bonnet for a compact surface) in Section 4.5.