

1. 9-A
2. 9-B
3. 9-C (You do not have to write proofs for isomorphisms of cohomologies on the top of page 103).
4. 7-C (Hint: To prove the formula for the first Stiefel-Whitney class of the tensor product of two line bundles on B , you may use the fact that there is a natural (i.e. commuting with pull backs!) bijection $[B, \mathbb{P}^\infty] \cong H^1(B, \mathbb{Z}_2)$. This map sends a map $f : B \rightarrow \mathbb{P}^\infty$ to $f^*(x)$ where x is the generator of $H^1(\mathbb{P}^\infty, \mathbb{Z}_2)$. This is true because $\mathbb{P}^\infty = K(1, \mathbb{Z}_2)$.

To prove the general tensor product formula you may use the splitting principal (we may prove it later): For any rank n vector bundle ξ over B , there exists a space S and a map $s : S \rightarrow B$ with these properties

- $s^*\xi$ is isomorphic to the Whitney sum of n line bundles on S .
- $s^* : H^*(B, \mathbb{Z}_2) \rightarrow H^*(S, \mathbb{Z}_2)$ is a monomorphism.)