

Problem 1. (8 points):

Consider the following parameters of an i-node based filesystem:

- Blocks are 1KB (2^{11} bytes) large
- Block pointers are 32-bits (4 bytes) wide
- Each i-node contains 32 direct pointers, 8 single indirect pointers, 8 double indirect pointers, and 1 triple indirect pointer.

1. What is the largest file size supported by this filesystem? Show your work, preferably leaving your final answer in sums of powers of 2.

2. Given a 1MB (2^{20} byte) file, how much space is “wasted” on disk due to the meta-structures needed to track the file’s allocated blocks? Again, show your work.