

Answer on Question #44778 - Math - Other

Consider a disk with size 40GB. The size of disk block is 4KB. Number of blocks needed to keep track of free space if the disk is initially empty by using Bit map method is _____

(A) 2560 (B) 5120 (C) 1280 (D) None of these

Solution:

The simplest form of free space bitmap is a bit array, i.e. a block of bits.

Assume that we use a 40 GB ($40 * 2^{30}$ bytes) hard drive with 4KB (4096 bytes) sectors, and bitmap itself is stored elsewhere, in every sector, as the disk is initially empty. The disk requires one bit for each sector or $40 * 2^{30} / 4096 = 10485760$ bits, or $10485760/1024/8 = 1280$ KB.

Answer: (C)