There are several basic *levels* of RAID you need to be aware of:

- **RAID 0**, which uses a technique called *striping* to combine two or more disk drives to create a single image whose total capacity is the sum of the capacities of the individual disks. RAID 0 is almost never used because although it allows for greater capacity, it doesn't provide any protection against the failure of one of the drives in the array. In fact, if one of the drives in a RAID 0 array fails, you'll lose all the data stored on all the drives in the array.
- **RAID 1,** in which a pair of disk drives are *mirrored* so that if one of them fails, the data on the other drive protects the data on the array.
- **RAID 10,** in which an even number of disk drives are both striped and mirrored. In other words, each pair of drives in the array is mirrored, and the resulting mirror pairs are striped to increase the array's capacity. Thus, the total capacity of the array is equal to half of the capacity of the drives combined; for example, if a RAID 10 array is created from eight 2TB drives, the total capacity of the array is 8TB (one half of the total 16TB raw capacity of the eight drives). RAID 10 is one of the safest types of RAID arrays because the array can survive the loss of any single drive within the array, and it can survive the loss of more than one drive provided that neither of the two lost drives is in the same mirror pair.

  RAID 10 is also one of the fastest forms of RAID. That's because there is very little overhead involved in the mirroring and striping required for RAID 10. Because of its speed and safety, RAID 10 arrays are often used for an organization's most critical data.
- **RAID 5,** in which disks are striped but not mirrored. Instead, redundancy is used across the striped drives so that if any one of the drives is lost, the data that was on that drive can be recreated using the data stored on the surviving drives.

  RAID 5 achieves its redundancy using the principal of *parity.* The simplest way to understand parity is to consider an example: Suppose that you write three numbers — say, 5, 10, and 15 — on three separate pieces of paper. Unfortunately, if you lose one of the pieces of paper, you'll lose the number that was written on it. To safeguard against this, you decide to calculate a second number such that the sum of all four numbers will be zero. In this case, the fourth number would be –30 (because 5 + 10 + 15 equals 30, so adding –30 to 30 gives you zero). Now, if you lose one of the pieces of paper — say, the one containing the number 10 — you just reverse the mathematical process you used to determine the fourth number. In other words, you *subtract* the three numbers you do know. After scratching your head to remember how to subtract negative numbers, you'll arrive at the answer — 10 — which happens to be the missing number.