Binary Fission Versus Mitosis

Cell division can be confusing, but similarities and differences between binary fission and mitosis can be summed up in one simple table:

Binary Fission	Mitosis
Asexual reproduction in which one organism (cell) divides to form two daughter organisms.	Asexual reproduction of cells, usually parts of complex organisms.
Occurs in prokaryotes. Some protists and eukaryotic organelles divide via fission.	Occurs in eukaryotes.

Primary function is reproduction.	Functions include reproduction, repair, and growth.
A simple, rapid process.	A complex process that requires more time than binary fission.
No spindle apparatus is formed. DNA attaches to the cell membrane prior to division.	A spindle apparatus is formed. DNA attaches to the spindle for division.
DNA replication and separation occur at the same time.	DNA replication is completed long before cell division.

Not completely reliable. Daughter cells sometimes get unequal numbers of chromosomes.	High fidelity replication in which chromosome number is maintained through a checkpoint at metaphase. Errors occur, but more rarely than in fission.