(2) How long would it take to transmit over a video channel the information contained in the human genome, approximately 1 meter of DNA?

Each base pair along the double helix counts as 2 bits of information, equivalent to one letter from a four-letter alphabet, and there is a base pair every 3.4 Å. Thus 1 m of DNA contains about 3×10^9 base pairs, or 6×10^9 bits (not quite a gigabyte!) A video channel, nominally 4 MHz wide, could transmit that much information in about a half hour.