Question1:

I created test files of size 1 MB, 5 MB, 10 MB, 25 MB, 50 MB, and 100 MB using truncate. Using a fixed buffer size of 8192 bytes, I measured transfer times and plotted them. The plot shows a nearly linear relationship between file size and execution time. This makes sense: since the communication protocol is strictly request, the time required is proportional to the number of chunks that must be transferred.

Question 2:

The main bottleneck is the overhead of many small FIFO requests\. Each chunk requires a system call and a context switch, so with small buffer sizes there are many round-trips. Increasing the buffer size reduces the number of chunks and raises throughput until limited by the underlying pipe/disk bandwidth.