1 Question 1

1.1 Intel Atom Z560
A popular processor that belongs to Intel’s family of low power "Atom" processors. The Z560 was released in 2010 and can be found in a variety of low powered netbooks.

It’s consumes 2.5W when operating at 2.13Ghz. While it has an impressively low power consumption, it lacks in ability to handle many peripherals and has only one core.

It has up to six different operating states labeled C0-C6. C6 is the low power mode that consumes the least amount of power.

1.2 Intel Xeon Processor E5-2699
One of the top processors on the market, this processor features 18 cores all operating between 2.3 and 3.6 GHz.

The power consumption is typically 145W when operating at 2.3Ghz.

2 Question 2
A simple NOR gate created by hand is in the figure ate the end of this document.

The rise and fall time should remain the same for either input being held. The same equivalent inverter is produced regardless.

3 Question 3
The power dissipation on a 5-input NAND is greater because there is a higher output capacitance. The widths of NMOSFETS have to be greater
than PMOSFETs in order to have equal rise and fall times. If NMOSFETS are in series, their capacitances add up in parallel.

This greater capacitance increases the power dissipation, particularly when switching. This relation is given by the following formula.

\[ P = CV^2 f \]  \hspace{1cm} (1)