:nce the precharge gate's delay increases linearly with n, and the
ree is log(n), the tree must be faster for large n. The key question
s which is faster for small n. I was interested in how students
ttacked this problem. The precharge gate will be faster, since it has
ewer transistors, and that means less input and output capacitance.
o the right anwer is the precharge gate is faster at small n and the
ree is faster for large n.

. Does the answer to question 3 give you an idea of how to build a
aster 32 input NOR?

ure, replace the NOR gates in the tree with precharge gates. This
ould allow you to increase the fanin of these gates, and shorten the
epth of the tree while maintaining the same gate delay. The NAND
ates in the tree invert the output of the precharge gates, so the
nputs to the NAND gates are monotonically rising signals.