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Query Optimization
3. Exercise, Winter 2007/2006

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1. Give an example query instance where the optimal join tree (using C_{out}) is bushy and includes a cross product. (3)

2. Give a justification why most optimization algorithms ignore cross products. (2)

3. Show that for chain queries the number of left-deep trees without cross products is: (5)

$$f(n) = 1 + \sum_{k=1}^{n-1} f(k-1) * f(n-k) = 2^{n-1}$$