WORKSHEET 2

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First exercise: try out executing the Factor(n) algorithm.
Work through the Factor(n) algorithm, writing down the values of aux (see the examples on the slides). Then try it out with some different numbers (e.g. 35, 13, 49).

Second exercise: Think about ways to make the Factor(n) algorithm faster.

Third exercise: QuickSort.
Take a deck of 9 cards numbered 1 to 9. Shuffle them, and line them up in front of you face down. Turn the leftmost card face up: this card is now the pivot. Go through the other cards one after the other from left to right, and for each of them

- turn this card face up
- if it's smaller than the pivot, move it to the immediate left of the pivot
- it it is larger, leave it where it is
- turn this card face down

At the end, you have 9 cards with your pivot face up somewhere in the middle. Repeat this process for the set of cards on the left of the pivot and for the set of cards on the right, until all your cards are face up and the right order. This is the QuickSort algorithm.

Take your deck of 9 cards, sort them from left to right in decreasing order and turn them face down. Then apply Quicksort. Did this take you longer or shorter than before?