Homework 11

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1 Bottom-up parsing

Question 1.1

The first few moves for parsing the string (n*n)*n bottom-up look. Write down the remaining moves.

Stack	Input	Action
$	(n*n)*n$	shift
$(	n*n)*n$	shift
$(n	*n)*n$	reduce F → n
$(F	*n)*n$	shift
$(F*	n)*n$	shift
$(F*n	)*n$	reduce F → n
$(F*F	)*n$	shift
$(F*F)	*n$	reduce (E) → (F*F)
$(E)*	n$	shift
$(E)*n	$	reduce F → (E)
$F*F	$	reduce n → F
$F*E	$	reduce E → F
$E	$	accept

Question 1.2

Compute the ITEMS and CLOSURE sets for the grammar in the previous question.

ITEMS

E → F * E | F:

E → . F * E | . F

E → F . * E | F

E → F * . E | F

E → F * E . | F

E → F * E | F .

F → (E) | *n*:

F $\rightarrow$. (E) | . n
F $\rightarrow$ (. E) | n
F $\rightarrow$ (E .) | n
F $\rightarrow$ (E) . | n
F $\rightarrow$ (E) | n .