

1. Draw an annotated parse tree for the expression $(3+5)*8-7n$ from the following syntax directed definition:

PRODUCTION	SEMANTIC RULE
$L \rightarrow En$	$Print(E.val);$
$E \rightarrow E_1 + T$	$E.val = E_1.val + T.val$
$E \rightarrow E_1 - T$	$E.val = E_1.val - T.val$
$E \rightarrow T$	$E.val = T.val$
$T \rightarrow T_1 * F$	$T.val = T_1.val * F.val$
$T \rightarrow F$	$T.val = F.val$
$F \rightarrow (E)$	$F.val = E.val$
$F \rightarrow digit$	$F.val = digit.lexval$

2. Construct the dag from the expression $((a+a)+(a+a))+((a+a)+(a+a))$.
3. Translate the expression $-(a+b)*(c+d)+(a+b+c)$ into quadruples and triples.