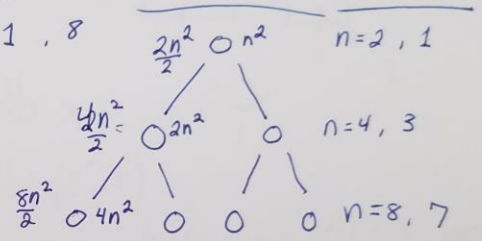
Recurrence Analysis:

$Cmul4 = (4cb^2 + 2db) \cdot 2^{\lg_2 n} - 1$ $\quad 2T(n/2) + \Theta(n^2)$

$Cmul3 = (3cb^2 + 5db)$

Cmul3	$(2^{\lg_2(n)} - 1)$	
$n=2$	$(3cb^2 + 5db) \times$ [illegible]	$= 1, 8$
$n=4$	$(3cb^2 + 5db) \times 3$	$= 24$
$n=8$	$(3cb^2 + 5db) \times 7$	$= 56$

Tree of multiplies



#mul's

$T(n) = O(2n-1)$

$\sum_{i}^{n} (2^{\lg_2 n} - 1)$ $\quad 2^n - 1$

Cmul4	
$n=2$ $(4cb^2 + 2db) \times 1$	Cof. Sum = 6
$n=4$ $(4cb^2 + 2db) \times 3$	Cof. Sum = 18
$n=8$ $(4cb^2 + 2db) \times 7$	Cof. Sum = 42

Theoretically: $Cmul4 = Cmul3$ in run time.

$2^n - 1$ levels.

for $d, c > 0$

$$(4cb^2 + 2db) \cdot (2^{\lg_2 n} - 1)$$

$$(4cb^2 \cdot 2^{\lg_2 n} - 4cb^2) + (2db2^{\lg_2 n} - 2db)$$

$$4cb^2(2^{\lg_2 n} - 1) + 2db(2^{\lg_2 n} - 1)$$