CS350 Hw 3

1. Loop(n)	Cost	times
$S \leftarrow 0$	c_1	1
for $i \leftarrow 1$ to n^2	c_2	$n^2 - 1$
for $j \leftarrow 1$ to i	c_3	$\sum_{j=1}^{n^2} j = \frac{n^2(n^2+1)}{2}$
$S \leftarrow S+i$	c_4	$\sum_{j=1}^{n^2} j-1 = \frac{n^2(n^2-1)}{2}$

$$T(n) = c_1 + c_2 n^2 + c_3 \left(\frac{n^2(n^2+1)}{2}\right) + c_4 \left(\frac{n^2(n^2-1)}{2}\right)$$

$$= c_1 + c_2 n^2 + c_3 \frac{n^4+n^2}{2} + c_4 \frac{n^4-n^2}{2}$$

$$T(n) = \Theta(n^4)$$