Ejercicio 1:  
SOLUCIÓN:  
  
T(n) = Coste(main) = Coste(do-while) = 2n2+8n O(n2)  
  
Coste(do-while) = [(3+Coste(Probando)) +1] \* n = [3+2n+4+1]\*n = 2n2+8n  
  
Coste(Probando) = 3+Coste(while) = 3 + 2n+1 = 2n+4  
  
Coste(while) = [1+(Coste(if)+1)]\*n/2 + 1 = [1+2+1]\*n/2 +1 = 2n +1  
  
Coste(if) = 1+1 = 2  
  
  
Ejercicio 2:  
SOLUCIÓN:  
  
T(n) = Coste(main) = 4 + Coste(for\_fil) = 4+ 4mn +5n +2 = 4mn+5n+6 O(mn)  
  
Coste(for\_fil) = 1+ [1+(Coste(for\_col)+1)+1]\*n +1 = 1+[1+4m+2+1+1]\*n+1  
= 4mn +5n +2  
  
Coste(for\_col) = 1 + [1+Coste(if-else)+1]\*m+1 = 1+[1+2+1]\*m+1 = 4m+2  
  
Coste(if-else) = max(2,2) = 2  
  
  
  
  
Ejercicio 3  
SOLUCIÓN:  
  
T(n) = Coste(main) = Coste(for\_i) = 3n3 + 5n2 + 4n +2 O(n3)  
  
Coste(for\_i) = 1+[1+Coste(for\_j)+1]\*n +1 = 1+ [1+3n2+5n+2+1]\*n+1  
= 3n3 + 5n2 + 4n +2  
  
Coste(for\_j) = 1+ [1+ (1+Coste(for\_k))+1]\*n+1 = 1+ [1+1+3n+2+1]\*n+1  
= 3n2 + 5n +2  
  
Coste(for\_k) = 1+ [1+1+1]\*n +1 = 3n+2  
  
  
Ejercicio 4:  
SOLUCIÓN  
T(n) = Coste(main) = 1 + Coste(do-while) = 1 + 3mc + 12c = 3mc + 12c +1 O(mc)  
  
Coste(do-while) = [3 + (1+Coste(Nd) +1] \* c = [3 +(1+3m+7+1)]\*c =3mc +12c  
  
Coste(Nd) = 3 + Coste(while) = 3 + (3m+4) = 3m+7  
  
Coste (while) = (1+2)\*(m+1) +1 = 3m+4  
  
  
Ejercicio 5:  
SOLUCIÓN:  
Cuando el incremento o decremento es de uno en uno, se puede aplicar la fórmula: [limite\_superior ¿ limite\_inferior +1]  
  
Bucle\_1 = n-1  
Bucle\_2 = n  
Bucle\_3 = log(n)  
Bucle\_4 = 0  
Bucle\_5 = n-2  
Bucle\_6 = n/2  
Bucle\_7 = n+1  
Bucle\_8 = n-1  
Bucle\_9 = infinito