CSE 101 Practice Problems - big-O notation

Running Time Analysis

For the pseudo-code below, give the asymptotic running time in $\Theta$ notation:

1. for $i = 1$ to $n$ do
   $j = i$
   while $j < n$ do
      $j = j + 3$

2. for $i = 1$ to $n$ do
   for $j = 2*i$ to $n$ do
      $s = s+1$

3. for $i = 1$ to $n$ do
   $j = i$
   while $j < n$ do
      $j = 2*j$

4. for $i = 1$ to $n$ do
   $j = n$
   while $i*i < j$ do
      $j = j - 1$

5. for $i = 1$ to $n$ do
   $j = 2$
   while $j < i$ do
      $j = j*j$

(source: Berkeley CS 170, Fall 2009, HW 1)