1.

n^(4/3)

n(log(n))^3

2^(sqrt(log()n))

n^(log(n))

2^n

2^(n^2)

2^(2^n)

2. a.

m1-w1

m2-w2

m3-w3

b.

m1-w2

m2-w1

m3-w3

w1 marries the man that she wants the most.

3.

m1-w4, 4th rank for m1, 1st rank for w4

m4-w3, 3rd rank for m4, 1st rank for w3

m2-w1, 3rd rank for m2, 1st rank for w1

m3-w2, 3rd rank for m3, 1st rank for w2

4.

It is no because a woman can only choose a man, it is 1-1 map.

Suppose 2 men are assigned to 1 woman, then it means that woman accepts 2 times, but for the marriage, she only chooses the last man she accepted.

5.

Assume There is a doctor cannot apply to a fellowship program. That means he applied to all fellowship programs but no one response to him. If so, all fellowship programs are full slots before he applied. That cannot happen if fellowship program 1 prefer to doctor 1, fellowship program 2 prefer to doctor 2, and no way to doctor 1 prefer to program 2, doctor 2 prefer program 1.

6.

I. f(n) = n\*n/2\*n/4 = n^3 / 8

II.

initialize Y to an n × n matrix of 0s

for i = 1 to n do

temp = X[i]

for j = i + 1 to n do

temp = temp + X[j]

Y [i, j] = temp

end for

end for

return Y