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1.

1 6 3
1 7 3
1 6 4
1 7 4
1 6 5
1 7 5
2 6 3
2 7 3
2 6 4
2 7 4
2 6 5
2 7 5

•The pseudocode gives us all the permutation of outer, inner and middle.

•Explanation: we know that we do 'outer' at first, 'middle' the second and 'inner' the third. According to the order in the list, in the first loop, outer is 1, middle is 3 and inner is 6, so it will print '1 6 3'. In the next loop, in order, inner becomes 7 and it will print '1 7 3'. After that, outer is 1 as well but middle becomes 3 and inner is 6. We can get all the result after we do the loop 12 times in order.

•Besides, we should pay attention to the order of 'outer, inner and middle' in the result.

2.

•10.10110

• Explanation:

$$e = \sum_{n=0}^{\infty} \frac{1}{n!} = \frac{1}{1} + \frac{1}{1} + \frac{1}{1 \cdot 2} + \frac{1}{1 \cdot 2 \cdot 3} + \cdots$$

When n = 0, 1, ..., 6 :

e ≈ 1+1+1/2+1/6+1/24+1/120+1/720 ≈ 2.7180555555555554

Integral part:

2/2=1...0 1/2=0...1 So 2→10

Decimal part:

0.718055*2=**1**.43611. 0.43611*2=**0**.87222 0.87222*2=**1**.74444 0.74444*2=**1**.48888 0.48888*2=**0**.97776

So 0.718055555→0.10110

So the binary form of e is 10.10110

3.

```
i = 0
while n > 0 do
    c←mod_2(n)
    L[i]←c
    n←div_2(n)
    i = i + 1
return L[i]
```

•Explanation: As we know, we should keep dividing the number (or quotient) by 2 and assign the remainder (either 0 or 1) to ai. When the quotient is 0, we end the algorithm. And the L[i] is what we need.