

2101
2101
2101

2101
2101

2101

2101

2101
2023 6 11

1. D

$$2^{100} \cdot n$$

2. C

$$\begin{aligned} & \text{for } i = 1 \text{ to } n \\ & \quad \text{Random } j \\ & \quad \text{sort } i \text{ to } j \\ & \quad \text{nlogn} \end{aligned} \quad \begin{aligned} & \text{Random } i \text{ to } j \\ & \text{sort } i \text{ to } j \\ & \text{c sort} \end{aligned} \quad \begin{aligned} & 2 \\ & 2 + 2 = O(2^2) \\ & O(2^2) \end{aligned}$$

3. A

$$\begin{aligned} & 1 \cdot n \cdot n \\ & \left(\frac{1}{2} \right) \cdot \frac{n+1}{2} \end{aligned}$$

4. C

Kruskal

5. B

$$\begin{aligned} & 57 \quad 79 \quad 23 \quad 6 \\ & 20 \quad 25 \quad \text{rear} \quad 25 \quad \text{rear}=26 \end{aligned}$$

6. C

7. A

n^2 e 2
—

8. A

{ 23,36,48,72
23,40,70,90 16,35 }()

9. B

B

10. D

11 6 57 54<57 57
3 38 54>38 43
51 54 4

1. $n \cdot 3^{(n-1)}$

$n = 6 \quad 3^{(6-1)} = 3^5 = 243 \quad 2000 \quad n = 7 \quad 3^{(7-1)} = 3^6 = 729$
2000 7

2. 0

0 0

3.

4. head=NULL

head=NULL

5. $O(1)$ $O(n)$

$O(1)$
 $O(n)$

6. BECA

7. 8 16

3 1 4 7 8 4+5+5+2

8. (44 49 53 64 80 91)

53 pivot

53 44 49 53

53

9. 2.5 p268 8.5

10. ABDFGEC/ABCD FGE/ABCF GED()

1. $O(N^2)$

2.

3. $(n(n-1)/2,)$

4. $()$

5. $()$

6.

$L = 2e = O(n+L) = O(n+2e)$

7.

$O(\log n)$

$O(\log n)$

$O(\log n)$

8.

$O(n)$ n

$O(\log n)$ $\log n$
 $n-1$

$O(1)$

$O(\log n)$

$O(\log n)$

$O(n)$ $n-1$

$O(\log n)$ $O(n + (n-1) \log n)$

$O(n \log n)$

9.

	{10, 20, 30, 40, 50}	1	(i=1)
20	{10, 30, 40, 50}	30	40	50

$$3^4 = 81$$

```
1.top = current->next;
2.prev->next = current->next;
```