



题4.4

9. 最有效算法: 二分查找

```

left ← 0  right ← n-2
while left < right
    mid ← (left+right)/2
    if mid ≤ mid+1 :
        left ← mid+1
    else:
        right ← mid-1
return left+1
时间效率:  $O(\log n)$ 

```

题4.5

数列: 9, 12, 5, 17, 20, 30, 8

$k = \lfloor \frac{7}{2} \rfloor = 4$

9 12 5 17 20 30 8

5 8 9 12 17 20 30

12 17 20 30

12

中位数为12

11. a.

$26 \times 4$

$13 \times 94$     94

$6 \times 188$

$3 \times 376$     376

$1 \times 752$

$94 + 376 + 752 = 1222$

b. 有区别, 但不大

$n \times m: O(\log n)$

$m \times n: O(\log m)$

12. a. result ← 0

while  $n > 0$ :

if  $n \% 2 == 1$

result ← result + m

$m \leftarrow m \times 2$

$n \leftarrow n \div 2$

return result

b. 效率:  $O(\log n)$