

(3)

3 7.

~~1 2 2~~  
~~2 3 3~~  
~~3 4.~~

~~4.5~~

5.

~~6~~

~~7~~

$$7-1=6$$

+  
+

$$\underline{3+2+2+1+1+1+1}$$

112

3 7

1 2 2

~~7~~

~~3 7~~  
1 2 2

3 7

2 2 !

~~7-1+(7-2)+(7-3)~~  
~~=6+5+1~~

3 7

~~2 2 +~~

1 2 2

$(7-1+1)+$

$$\begin{array}{r} 37 \\ \times 21 \\ \hline 122 \\ 122 \\ \hline 237 \end{array}$$

$$\begin{array}{r} 37 \\ \times 21 \\ \hline 122 \\ 23 \\ \hline 37 \end{array}$$

$$\begin{array}{r} 455 \\ 566 \\ 677 \\ 788 \end{array}$$

(3)

$$\overline{\sqrt{2}\sqrt{4}\sqrt{8}\sqrt{16}} = n$$

$$\Rightarrow \overline{\sqrt{2}\sqrt{4}\sqrt{32}} = n$$

$$\Rightarrow \overline{\sqrt{2}\sqrt{4}\cdot\sqrt{2}} = n$$

$$\Rightarrow \overline{\sqrt{2}\sqrt{16}\sqrt{2}} = n$$

$$\begin{aligned}
 &\Rightarrow \sqrt{2} = n \\
 &\Rightarrow \sqrt{2 \cdot 4\sqrt{2}} = n \\
 &= \sqrt{8\sqrt{2}} \\
 &\Rightarrow 8\sqrt{2} = n^2 \\
 &\Rightarrow 64\sqrt{2} = n^4 \\
 &\Rightarrow 4096\sqrt{2} = n^6 \\
 &\Rightarrow n^6 = 8192
 \end{aligned}$$

$$\begin{aligned}
 &\sqrt{32} \\
 &= \sqrt{8 \cdot 4} \\
 &= 2\sqrt{8} \\
 &= \frac{\sqrt{32}}{\sqrt{16 \cdot 2}} \\
 &= \frac{\sqrt{32}}{4\sqrt{2}}
 \end{aligned}$$

$$\begin{aligned}
 &\sqrt{2\sqrt{4\sqrt{8\sqrt{2}}}} \\
 &= \sqrt{2 \cdot 2\sqrt{8 \cdot 4}} \\
 &= \sqrt{4\sqrt{8\sqrt{2}}} \\
 &= 2\sqrt{2\sqrt{8\sqrt{2}}} \\
 &= 2\sqrt{(2\sqrt{2\sqrt{8\sqrt{2}}})^2} \\
 &= \sqrt{4 \cdot 2\sqrt{8\sqrt{2}}} \\
 &= \sqrt{\sqrt{(8\sqrt{8\sqrt{2}})^2}} \\
 &= \sqrt{\sqrt{64\sqrt{2}}}
 \end{aligned}$$

3 7 ✓  
2 1 2

1. 2 2  
2. 3 3  
3. 4 4  
4. 5 5  
5. 6 6  
6. 7 7  
7. 8 8

2 ✗

1 (3) (5) ←

$$7-3 = (4 \times 2) = 8$$

$$(x-5) = 2x + 6$$

1 3 5

7 - 3  
3 - 2  
1 - 1

7 → 3  
+

7 - 3

7 - 3  
6 - +  
5 - 3  
4 - 3  
2

$$\begin{array}{r} 1 \ 3 \\ - 9 \\ \hline 2 \end{array}$$

$$\text{⑦-3} \quad \begin{array}{l} \cancel{\text{ex}} \quad n \times (x - a[n]) \\ i \times (x - a[i]) \end{array}$$

$$1 \quad 3 \quad (5) = 3 \times (x-5) = 6 \quad \checkmark$$

7 - 6  
+

$$i = ?$$

$$= ix(x-a[i])$$

$$x - 2 = 2 \times (4 - 2) = 2$$

7x

$$; x \quad (x - \alpha[i])$$

$$\Rightarrow 2 \times (4 - 3) = 2$$

- -

$$\cancel{x - 1} =$$

7 

$$3^{-1} = \frac{1}{3}$$

$$x=7$$

3 5

$$6+4$$

$$ix(x - a[i])$$

$$= 3x(7-5) = 6$$

$$i_x - i = 5$$

$$= ix(x - a[i])$$

$$= 2x(5-3) = 4$$

$$i_x - i$$

$$x=5$$

$$x=4$$

$$x=3$$

$$x=2$$

$$x=1$$

$$x=0$$

4

$$\textcircled{1} \quad \underline{\underline{3}} \quad \underline{\underline{5}} - \underline{\underline{3}}$$

+

2

+

2

+

1

+

1

+

1

$$x=0$$

$$x=-1$$

$$x=-2$$

$$x=-3$$

$$x=-4$$

5

1  $\textcircled{2}$  3 5

③

$s=0$

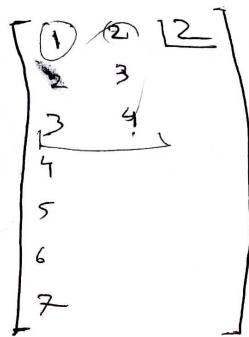
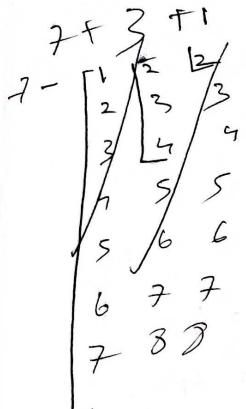
$s+=i$

$113$

$11(2 \times 2)^3$

~~7+~~

~~i=0~~



~~i=1~~

~~i=0~~

$$7 - a[0] = 7 - 0 = 7$$

+  
3  
+  
2

$$7 - a[1] = 7 - 2 = 5$$

$$7 - 2 - 3 = 2$$

$$(7 - a[i]) - i =$$

7 -  
7 -

$$x - a[i] - i =$$

7 - 1 - 0 = 6

$$7 - 2 - 2 = 3$$

$$7 - 3 - 2 = 2$$

1	2	2
2	3	
3	4	
4		
5		
6		
7		

$$7 - a[i] - i = 6$$

$$7 - a[i] - i = 7 - 2 - 1 = 4$$

$$7 - a[i] - i = 7 - 2 - 2 = 3$$

7 -

$$\begin{array}{r} 11 \quad 2 \quad 2 \\ \boxed{2} \quad 3 \\ \boxed{3} \quad 4 \\ \boxed{4} \quad 5 \\ \boxed{5} \quad 5 \\ \boxed{6} \quad 6 \\ \boxed{7} \quad 7 \\ \boxed{8} \quad 8 \end{array}$$

~~7~~

$$\begin{array}{r} 7 - 0 - 1 = 6 \\ + \\ 7 - 2 - 1 = 4 \\ + \\ 7 - \end{array}$$

$$7 - 0 - 1 = 6$$

$$7 - 1 - 2 = 4$$

$$7 - 2 - 2 = 3$$

$$\begin{array}{r} 7 - (0+0) = 7 \\ 7 - 10 \\ + \end{array}$$

$$\cancel{7 - (0+0) = 6}$$

$$7 - (1+0) = 6$$

$$7 - (3) = 4$$

$$7 - 3 + 3 = 7$$

$$\begin{array}{r}
 1 \quad 2 \quad 3 \\
 2 \quad 3 \quad 3 \\
 \hline
 3 \quad 4 \quad 4 \\
 4 \quad 5 \quad 5 \\
 \hline
 5 \quad 6 \quad 6 \\
 6 \quad 7 \quad 7 \\
 \hline
 7 \quad 8 \quad 8 \\
 \hline
 \end{array}$$

$$\begin{array}{l}
 i=0 \quad x-s+i = 7 \\
 i=1 \quad 7 - \\
 \hline
 \end{array}$$

$$x, s, i$$

$$7 - 1 - 0 = 6$$

$$7 - 3 - 1 = 3$$

$$7 - 5 -$$

~~x-6~~

$$x - s = 6$$

$$\cancel{x-} \quad 7 - 3 = 4$$

$$7 - 5 = 2$$

(5)(3) 1

$$\begin{array}{l}
 7 - s = 2 \times 2 \\
 7 - 3 = 6 \times 2
 \end{array}$$

$$\begin{array}{r}
 x \quad s \quad i \\
 7 - 5 - 1 = 1 \times 3 = 3 \\
 + \\
 7 - 3 - 2 = 2 \times 2 = 4
 \end{array}$$

$$7 - 1 - 3 =$$

$$s = 1 \ 3 \ 5 \ 7$$

$$\alpha[i] = 1 \ 2 \ 2$$

~~2 3 3~~

$$\cancel{2} \ 3$$

+

$$1 \ 2 \ 2$$

$$(7-1+1) = 7$$

+

$$7-2+1 = 6$$

$$\begin{matrix} 1 & 2 & 2 \\ 2 & 3 & 3 \end{matrix}$$

$i = 0$

~~7~~

$$1 \ 2 \ 2 = \cancel{6}$$

~~7~~

$$\begin{array}{r} 1 \ 3 \ 5 \\ 1 \ 2 \ 2 \\ \hline 2 \ 3 \ 0 \\ 3 \ 4 \end{array}$$

$$\cancel{2} = 2 \times 2 = 4$$

4  
5  
6  
7

7+

	3	5
1		
2	3	
3	9	
4		
5		
6		
7		

1	2	2
2	3	3

$$7+3$$

0	1	2	3	5	2
1					
2					
3					
4					
5					
6					
7					

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

$$(7-3) - a[3] + 1 = 3$$

~~$$(7-5) - 2 + 1 = 1$$~~

$$(x - s - a[i] + 1)$$

$$7 - 1 - 1 + 1 = 6$$

~~$$7 - 3 - 2 + 1 = 3$$~~

~~$$7 - 5 - 2 + 1 = 1$$~~

$$x = \text{out}$$

$$9 \rightarrow (6) 4+3=9$$

$$15 \rightarrow 10 + 4 = 14$$

$s (15)$

$1 3 4 6 8$

$\text{sort}$

$s = 2 4 6 8 10 12 14 16 18 20 22$

$9 \downarrow$

$15$

$3 + 2 + 3 + 2 + 3$

when - 9

$$(9 - 2 + 1) = 8 +$$

$$(x - s - a[i] + 1)$$

$$= 9 - \underline{6} - 3 + 1 = 1$$

$$= 9 -$$

$$s = 1 \quad \underline{4} \quad 8 \quad \underline{14} \quad 22$$

$$\text{Ans: } \underline{8} + 1 +$$

$$= x - s - a[i] + 1$$

$$= 9 - \underline{4} - \underline{3} + 1 = 1$$

$$= 9 - \underline{8} - \underline{9} + 1 = -2$$

$$= 9 - 14 - 6 + 1 =$$

5	11
11	2
1	3
2	4
3	5
4	6
5	7
6	8
7	9
8	10
9	11
10	12
11	13
12	14
13	15

~~11 + 5 + 2 + 1 = 19~~

$19 = 5 + 3 + 2 + \cancel{2} + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1$

1	2	2
2	3	3
3	4	4
4	5	5
5	6	6
6	7	7
7	8	8

sum arr = 1 3 6 10 15

$11 - 1 + 1 = 11 +$

3' 20

3	4	8
4	5	9
5	6	10
6	7	11
7	8	12
8	9	13
9	10	14
10	11	15
11		
12		
13		

$7 + 3 + 1 = 11$   
 $18 + 7 + 2$

14  
15  
16  
17  
18  
19  
20

4 ~~2~~ 9

2	3	4	7
3	4	5	8 11
4	(5)	6	9
5	6	7	10
6	7	8	11
7	8	9	12
8	9	10	13
9	10	11	14

$$8+3+1=12$$

$$9-2+1=8$$

2 4  
3 5  
4 6  
5

2, 3

2 5  
3 6  
4 5  
5 6  
6 7  
7 8  
8 9  
9 10  
10 11  
11 12  
12 13  
13 14  
14 15

2 5 - 7  
3 6 - 9  
4 7 - 11  
5 8 - 13  
6 9 - 15  
7 10 - 17  
8 11 - 19

~~7~~  
7 1 2 2  
2 3 3  
3 4 4  
4 5 5  
5 6 6  
6 7 7  
7 8 8

7+3+1

② 9

$$7 - \text{sum} = 6 + 4 +$$

3 7 8

① ② ③

2 3 3

3 4 4

4 5 5

5 6 6

6 7 7

7 8 8

1 + 2 + 3

1 ③ 5

3  
+  
4  
+

$\begin{matrix} 3 & 7 \\ \swarrow & \searrow \\ 2 & 2 \\ \underline{2} & \underline{3} \\ 3 & 4 \\ \swarrow & \searrow \\ 5 & 5 \\ \underline{5} & \underline{6} \\ 6 & 7 \\ \swarrow & \searrow \\ 8 & 8 \end{matrix}$

~~Method 2~~  
~~Left Maxima (3-5)~~  
~~X~~  
~~3+~~

~~Method 2~~  
~~Left Maxima (3-5)~~  
~~X~~

3

$\begin{matrix} 3 \\ | \\ 2 \\ | \\ 2 \\ | \\ 2 \end{matrix}$ 
 $(x-5)/2 + 1$

~~(7+1)/2~~

~~3~~

~~7~~

$$\begin{aligned}
 & (x-5)/3 + 1 \\
 & = (7-5)/3 + 1 \Rightarrow 6+1=7 \\
 & \approx 1
 \end{aligned}$$

~~(n-s)+2~~

$$\frac{(n-s)}{(i+1)} + 1 \quad \checkmark$$

4 ~~12~~ 20

1	3	4	6
2	4	5	7
3	5	6	8
4	6	7	9
5	7	8	10
6	8	9	11
7	9	10	12
8	10		
9	11		
10	12		

$$4 + 9 + 3 + 3 + 3 + 2 + 2$$

$$+ 2 + 2 + 1$$

$$+ 10$$

11.

12.

13.

14.

15.

16.

17.

18.

19.

20.

$x = 20$

$$\frac{(x-s)/(i+1) + 1}{\overbrace{\phantom{000}}^2}$$

$$(20-11)/(i+1) = 20 + 9$$

$$(20-9)/\cancel{i+1} + 1 = 9$$

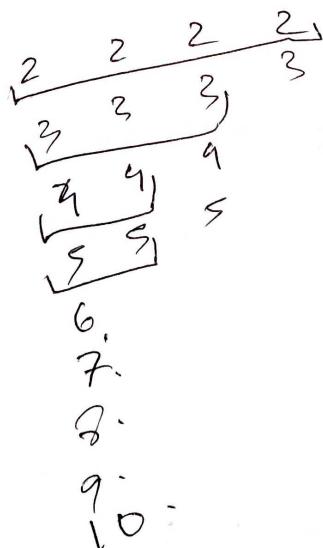
$$(20-8)/\cancel{i+1} + 1 = 5$$

$$(20-14)/\cancel{4} + 1 =$$

$$16/4 = 1 + 1 = 2$$

16

4 ~~10~~



1 + + + +

4 4 4

+1

1

35

3

29

39

30

31

32

33

34

35

35

35

$$(x-5)/2 + 1 = 2$$

$$(5-1)/2 + 1 = 5$$

$$(5-4)/2 + 1 = 1$$

$$(5-7)/3 + 1 = 1$$

194<sup>th</sup> input  $\downarrow$   
code: ~~701030300305~~

c=7 but supposed to be -6

$$+1 = ?$$

3 5  
1 3 3

$$\begin{aligned}(3-1)/1 + 1 &= 3 + 1 + 3 \\(3-4)/2 + 1 &= 1 \\(3-7)/3 + 1 &= \\-4 + 1 &= 3\end{aligned}$$

3 5

3	5
1	3 3

1  $\swarrow$  3 3  
2 4 4  
3 5 5  
4 6 6  
 $\Sigma$  6 6

$$\begin{aligned}(3-1)/1 + 1 &= 3 + 1 = 9 \\(3-4)/2 + 1 &= \end{aligned}$$

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PROBLEMS SUB

My Submis

#

[18650069](#)

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[18647952](#)

[18647840](#)

By heremeyusuf, contest: Educational Codeforces Round 127 (Rated for Div. 2)

```
#include <bits/stdc++.h>
using namespace std;

int main() {
    ios::sync_with_stdio(false);
    cin.tie(NULL); cout.tie(NULL);
    long long int t,n,x,e,i,s,c;
    cin>>t;
    while(t--) {
        cin>>n>>x;
        vector<int> v;
        while(n--) cin>>e,v.push_back(e);
        sort(v.begin(),v.end());
        i=1,s=0,c=0;
        for(auto k:v) {
            s+=k;
            if(s>x) break;
            c+=(x-s)/i+1,i++;
        }
        cout<<c<<endl;
    }
}
```

## →Judgement Protocol

Test: #1, time: 0 ms., memory: 4 KB, exit code: 0, checker exit code: 0,  
Input

```
4
3 7
2 1 2
5 9
10 20 30 40 50
1 1
1
2 1000
1 1
```

Output

```
11
0
```