



KMIT-NFS-1004	<b>KMIT – NIRANTHAR</b> <b>Season-1</b> <b>Programming Assignments</b>	Tuesday 15th OCT 2019
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## 2. Abhijeet the Robot

Mr.Banerjee has built a robot named Abhijeet and would like to test it out at a RobotCombat ( Robot fight). The combat area, is a square grid plane. The robot, Abhijeet, is initially placed at the origin of the plane, or (0,0) position.

In one second Abhijeet can either move forward by 1 unit or move right by 1 unit, or stay still. So from position(p,q), Abhijeet, can spend one second and move to (p+1,q) , (p,q+1) or (p,q)

After S seconds , the referee sees and reports that Abhijeet lies on or inside the grid/plane of side-length d with coordinates (P,Q),(P+d,Q), (P,Q+d),(P+d,Q+d). Calculate how many points with integer coordinates on or inside this square could be Abhijeet's position after exactly S seconds.

### Input:

The first and only line of input contains four space-separated integers: P , Q, d, and S .

### Output:

Print the number of points with integer coordinates that could be the Abhijeet's position after S seconds.

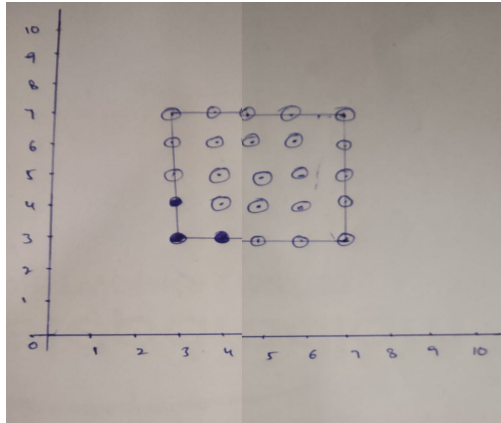
### Constraints:

$0 \leq P, Q \leq 100$

$1 \leq d \leq 100$

$0 \leq S \leq 400$

### Input/Output

Input	Output	Comments
3 3 4 7	3	<b>Abhijeet possible positions on/inside grid is 3</b>  <b>Explanation:</b>

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		<p>Initially abhijeet is at (0,0)</p> <p>To reach (3,3) abhijeet takes 6 seconds- 1point</p> <p>(3,4) takes 7 seconds - 2points</p> <p>(3,5) takes 8 seconds - exceeds the time</p> <p>(3,6) takes 9 seconds - exceeds the time</p> <p>So...on</p> <p>(4,3) takes 7 seconds - 3points</p> <p>(4,4) takes 8 seconds - exceeds the time</p> <p>(4,5) takes 9 seconds - exceeds the time</p> <p>So...on</p> <p>Therefore number of points with integer coordinates that could be the abhijeet's position at and after 7 seconds is 3 points</p>
5 4 8 11	6	<b><u>Abhijeet possible positions on/inside grid is 6</u></b>
3 4 8 5	0	<b><u>Abhijeet possible positions on/inside grid is 0</u></b> <p>Initially abhijeet is at (0,0)</p> <p>To reach (3,4) abhijeet takes 7 seconds. But the time given is 5seconds so he cannot reach.</p>

