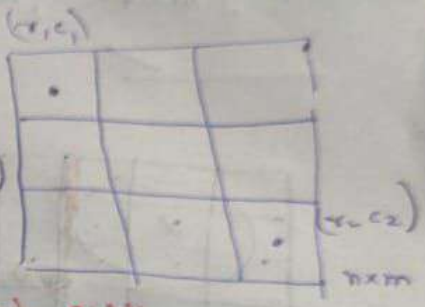
3548 - Min Sensors to convey Grid

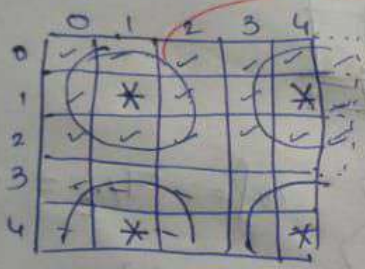
n, m

n × m



Chebyshev dist = $\max(|r_1 - r_2|, |c_1 - c_2|)$

① n = 5, m = 5, K = 1



2K+1 area covered by one sensor

$(r_1, c_1) = (1,1)$

$(r_2, c_2) = (0,1), (0,0)$

cd = 1

↳ placing 4 sensors

K = 1

~~dgb~~ = 2K+1

⇒ So, $\frac{m}{2k+1} = \frac{5}{3} = 2$

→ m % (2K+1)

Col = 2

$n/_{2k+1} = \frac{5}{3} = 1$

n % (2K+1)

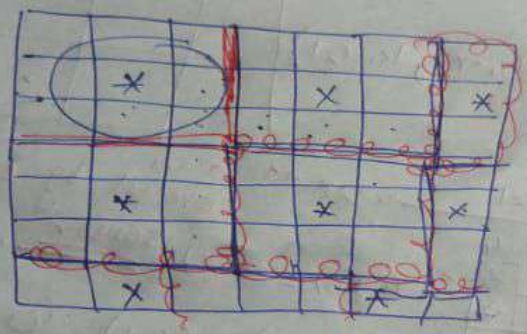
= 1

row = 2

Ans = row * col

Ex 2

n = 7 , m = 7 , K = 1



row = 7/3 = 2

& model = 1

Total = 2+1

= 3

col = 7/3 = 2

= 1

= 3

So, Total = 3 * 3

= 9

odd