

First I tried shapes with no internal dots
 and noticed that each time
 p goes up by 1, the area goes up by 0.5

4,0 has 1 cm^2 which is made of 0.5×2
 the 2 which comes from $4-2$

6,0 has 2 cm^2 which is 4×0.5
 and the 4 comes from $6-2$ of the formula

so I deduced that the first bit is

$$(p-2) \times \frac{1}{2} = A = \frac{p-2}{2}$$

But this does not work with internal dots

$i=0$

p	A
3	0.5
4	1
5	1.5
6	2

$$\frac{p-2}{2}$$

$i=1$

p	A
3	1.5
4	1
5	1.5
6	2

$$\frac{p-2}{2} + i$$

$i=2$

p	A
3	2.5
4	3
5	3.5
6	4

$$\frac{p-2}{2} + i$$

Next I tried shapes with a internal dot

Each time p goes up, the area still goes up by 1
 so I knew $(p-2) \times \frac{1}{2}$ was a part of it
 however if I used that, I would be just
 1 cm^2 short which is the amount of i
 so I updated the formula to

$$(p-2) \times \frac{1}{2} + i = A = \frac{p-2}{2} + i$$

and I tested it on a bigger shape of 12,4 $(12-2) \times \frac{1}{2} + 4 = 9$

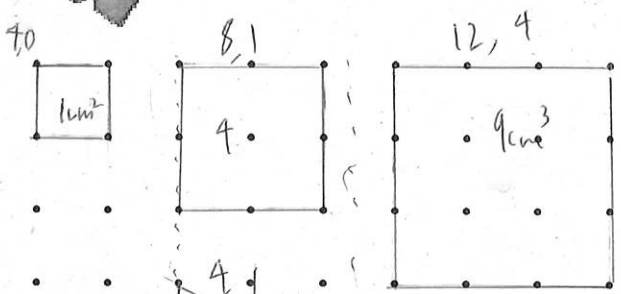
which worked and I tested on an 10×10 square $10 \times \frac{1}{2} + 9 = 9$

even bigger shape which also worked which was a 28×28 $5 + 4 = 9$

$$28-2 \times \frac{1}{2} + 28$$

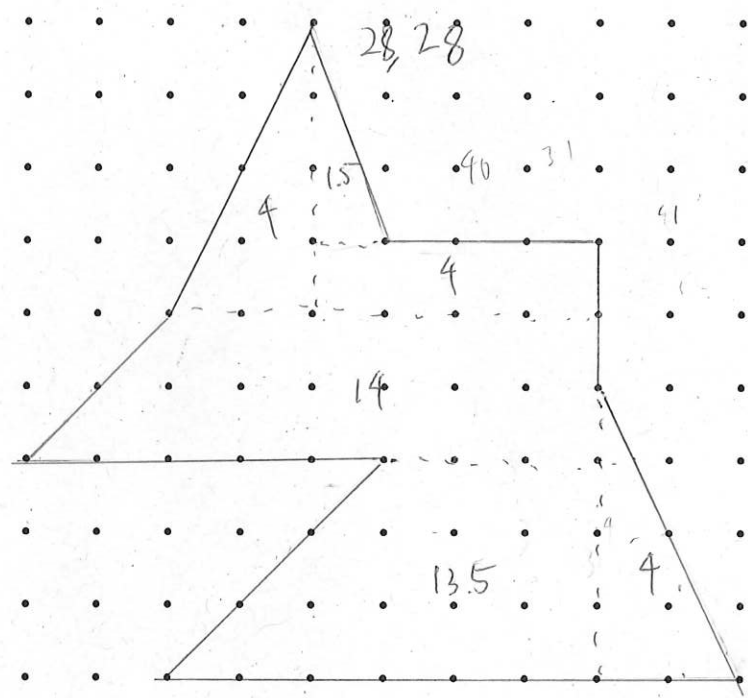
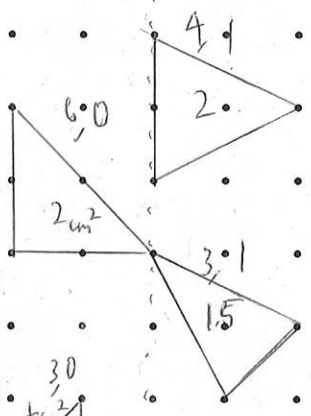
$$26 \times \frac{1}{2} + 28$$

$$13 + 28 = 41$$

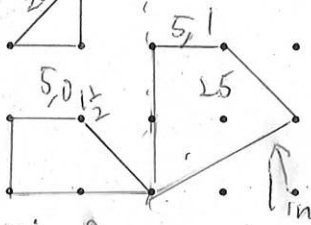


$$(p-2) \times \frac{1}{2} + i$$

20
13 + 27
40



1
48
x 3
13.5



↑ internal dot

(p-2) 3+i ↑
no internal dot

$$4 + 4 + 4 + 14 + 13.5 + 15 = 41$$