Handout: Approach 2 – Square Root of Area x 4 + 4

The Pool Border Problem

How many square tiles does it take to build a <u>border</u> around a square "pool"?
Find a way to know the number of tiles it will take without having to count,
for any size pool.

$4\ell + 4 =$ $4\sqrt{A} + 4 = T$

Students try first on own
Partners share what they did
Group discussion

P Pool Size	T Border Size
4	12
9	16
16	20
25	24
36	28
49	32
64	36
81	40
106	
121	
225	64

$(\sqrt{400})4 + 4 = 84$

$(\sqrt{16})4 + 4 = 20$

$(\sqrt{25})4 + 4 = 24$

$\sqrt{4} \times 4 + 4$

$2 \times 4 + 4$
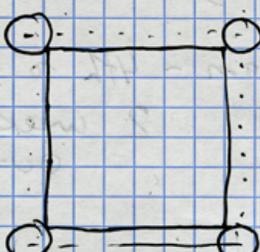
$8 + 4 = 12$

$(\sqrt{Pool} \times 4) + 4$

Pattern for # of tiles
is add 4 for next size

$\frac{16}{12}{28}$... 16, 12, 28

$6 \times 4 + 4$

$15 \times 4 + 4$

64

$4(\sqrt{A}) + 4 = T$