

2018 MATH FIELD DAY
HUDDLE PROBLEMS

Problem 1. How many integers n are there such that \sqrt{n} , rounded to the nearest integer, is 2018?

Problem 2. The following expression evaluates to an integer. Find that integer.

$$\left(\sqrt{21 + 5\sqrt{17}} + \sqrt{21 - 5\sqrt{17}}\right)^2$$

Problem 3. There are two positive integers k for which

$$\sqrt{k^2 + k + 75}$$

is an integer. Find the product of these two values for k .

Problem 4. The shaded rectangle constitutes what fraction of the regular octagon's total area?

