

Risp 1: Triangle Number Differences

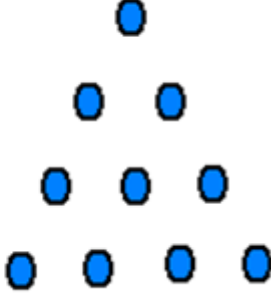
Pick two whole numbers between 1 and 10 inclusive,
and call them a and b .

Say that T_n is the n th triangle number.


Find T_a and T_b .

For example, $a = 4...$ and $b = 2...$

$T_a = 10$



$T_b = 3$



What is the difference between T_a and T_b ?
Is this a prime number?

When is the difference between two triangle numbers
a prime number?

Extension:

*when is the difference between two square numbers
a prime number?*

Between two cubes?

Between two fourth powers?