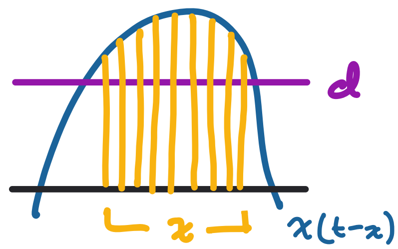
For a time, distance pair (t, d)

We want to find integers x for which

$$x(t-x) > d. \qquad (1)$$



This will be the integers in (x_a, x_b), where x_a and x_b are the solutions of

$$x(t-x) - d = 0$$

$$-x^2 + tx - d = 0$$

$$x_a, x_b = \frac{-t \pm \sqrt{t^2 - 4(-1)(-d)}}{-2} = \frac{t \pm \sqrt{t^2 - 4d}}{2}$$

The minimum integer solution to (1) is:

$$x_{min} = \left\lfloor \frac{t - \sqrt{t^2 - 4d}}{2} \right\rfloor + 1$$

And the maximum is:

$$x_{max} = \left\lceil \frac{t + \sqrt{t^2 - 4d}}{2} \right\rceil - 1$$

The number of solutions is:

$$x_{max} - x_{min} + 1 = \left\lceil \frac{t + \sqrt{t^2 - 4d}}{2} \right\rceil - \left\lfloor \frac{t - \sqrt{t^2 - 4d}}{2} \right\rfloor - 1$$