# Using x\_squared\_minus\_y.csv

Experiment 1

> result <- cgp(dataset = x\_squared\_minus\_y,

+ model = output ~ x + y,

+ maxGenerations = 1000,

+ rowsFuncNodes = 5,

+ colsFuncNodes = 5,

+ levelsBack = 2,

+ updateFreq = 100)

Generation: 1 / 1000

Fitness of best solution so far: 3310.504

Average fitness of population: 3.473594e+40

Generation: 101 / 1000

Fitness of best solution so far: 3118.098

Average fitness of population: 3273.095

Generation: 201 / 1000

Fitness of best solution so far: 52.16118

Average fitness of population: 705.1304

Generation: 301 / 1000

Fitness of best solution so far: 51.5747

Average fitness of population: NaN

Generation: 401 / 1000

Fitness of best solution so far: 51.5747

Average fitness of population: NaN

Generation: 501 / 1000

Fitness of best solution so far: 51.5747

Average fitness of population: 704.5511

Generation: 601 / 1000

Fitness of best solution so far: 51.5747

Average fitness of population: 2034.725

Generation: 701 / 1000

Fitness of best solution so far: 51.5747

Average fitness of population: 704.4237

Generation: 801 / 1000

Fitness of best solution so far: 51.5747

Average fitness of population: 695.0668

Generation: 901 / 1000

Fitness of best solution so far: 51.5747

Average fitness of population: 2009.669

Generation: 950 / 1000

Fitness of best solution so far: 0

Average fitness of population: 662.9605

Best solution found as text:

(c + ((a \* a) - ((a - a) + (b - c))))

> result$bestSolution

$inputNodes

chromoID value

1 1 NA

2 2 NA

3 3 0

$functionNodes

chromoID value funcID inputs

1 4 NA 2 2, 3

2 5 NA 3 1, 1

4 7 NA 2 1, 1

6 9 NA 1 7, 4

11 14 NA 2 5, 9

23 26 NA 1 3, 14

$outputNodes

chromoID value inputs

1 29 NA 26