Rapport du projet

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introduction

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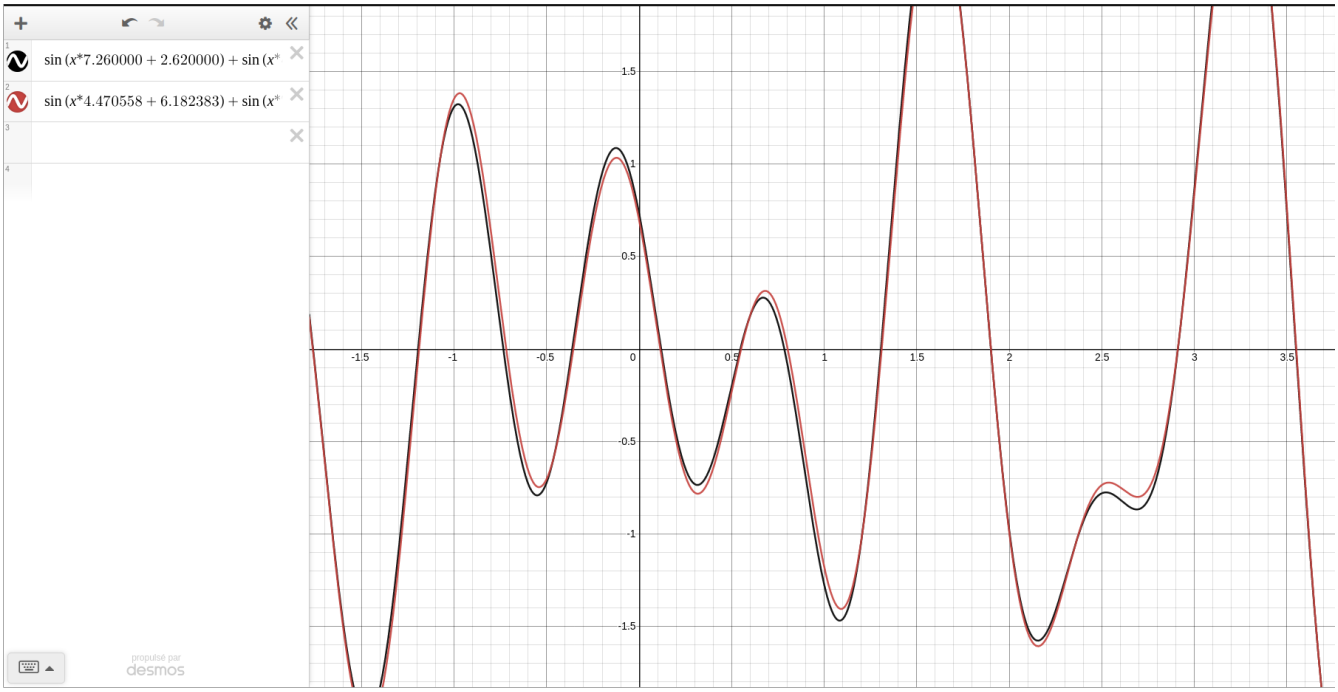
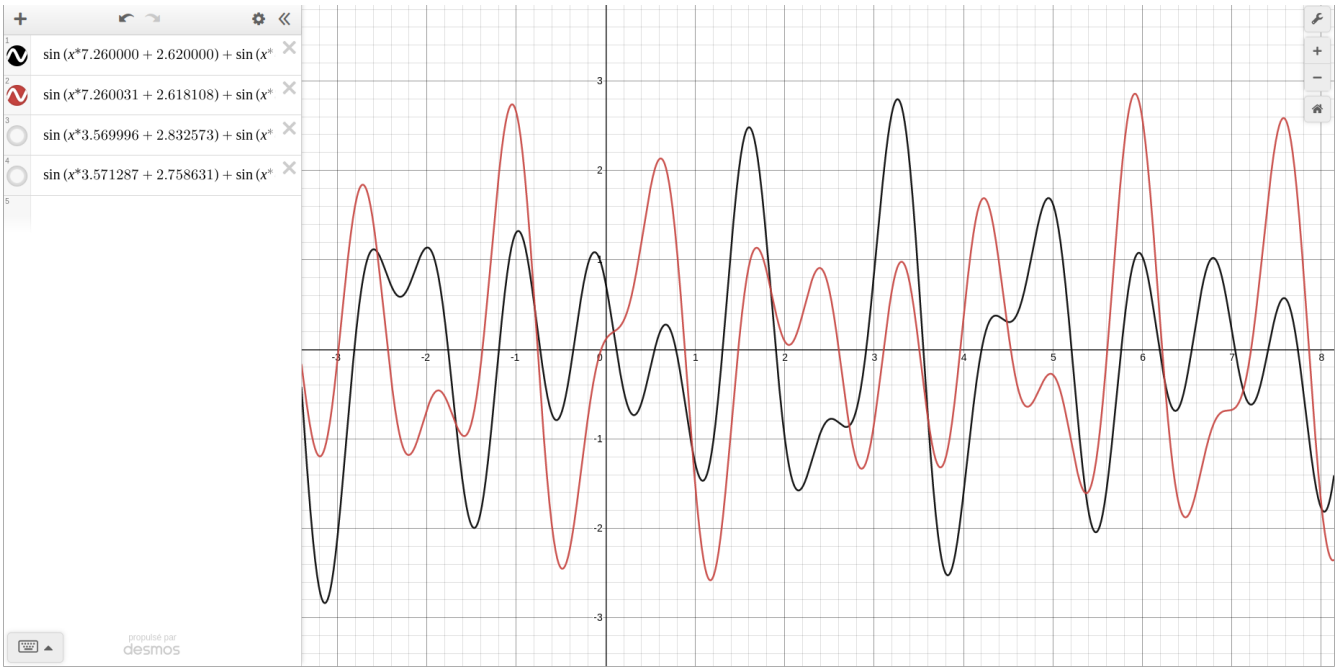
présentation du problème

- **L'influence (ou non) de points de croisement tombant au milieu d'un sinus ou entre deux sinus**
- **La comparaison entre les runs précédents et des runs où les valeurs x0..x7 évoluent en même temps que le génome (par mutation et croisement)**

Resultat

plot points de croisement tombant au milieu d'un sinus


sin (x*7.260000 + 2.620000) + sin (x*
sin (x*4.470558 + 6.182383) + sin (x*
propulsé par desmos


sin (x*7.260000 + 2.620000) + sin (x*
sin (x*7.260031 + 2.618108) + sin (x*
sin (x*3.569996 + 2.832573) + sin (x*
sin (x*3.571287 + 2.758631) + sin (x*
propulsé par desmos

Run configuration: Start time: 2022-01-15_17-11-04 Seed: 1642263064 Number of generations: 100 Population size: 10000 CPU Threads number: 1 Evaluation goal: 1

> Special options: Offspring population size: 10000 Mutation probability: 1 Crossover probability: 1 Selection operator: Tournament Selection pressure: 7 Reduce parent pressure: 2 Reduce offspring pressure: 1 Reduce parents operator: Tournament Reduce offspring operator: Tournament Surviving parents: 10000 Surviving offspring: 10000 Replacement operator: Tournament Replacement pressure: 2 Elitism: 1 Elite size: 1

Remote island model: Remote island model: 0 Ip file: ip.txt Migration probability: 0.3 Server port: 2929 Reevaluate immigrants: 0

> Result: Best fitness: 769.788 Best individual: 69.4309 4.47056 6.18238 29.0694 7.26093 2.57436 26.4071 3.56902 2.87914 769.788

> Elapsed time: 44.7962 s

User's messages:

Run configuration: Start time: 2022-01-15_23-24-00 Seed: 1642285440 Number of generations: 100 Population size: 10000 CPU Threads number: 1 Evaluation goal: 1

> Special options: Offspring population size: 10000 Mutation probability: 1 Crossover probability: 1 Selection operator: Tournament Selection pressure: 7 Reduce parent pressure: 2 Reduce offspring pressure: 1 Reduce parents operator: Tournament Reduce offspring operator: Tournament Surviving parents: 10000 Surviving offspring: 10000 Replacement operator: Tournament Replacement pressure: 2 Elitism: 1 Elite size: 1

Remote island model: Remote island model: 0 Ip file: ip.txt Migration probability: 0.3 Server port: 2929 Reevaluate immigrants: 0

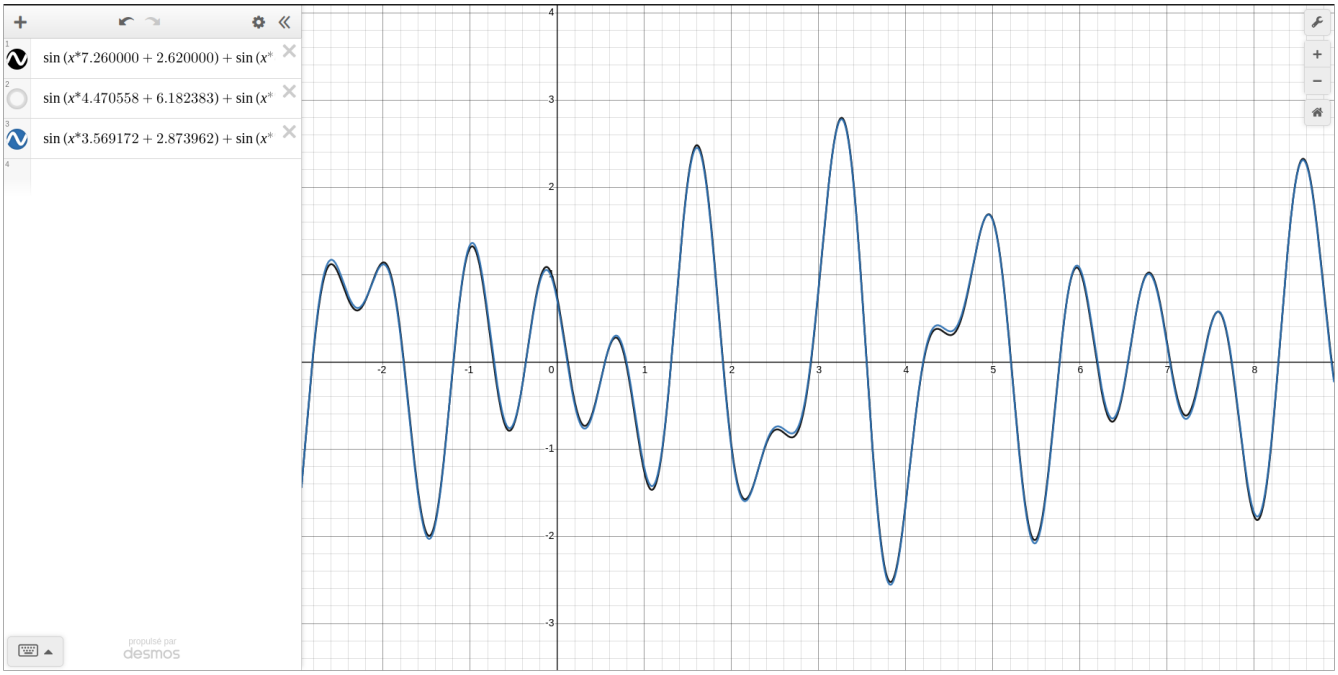
> Result: Best fitness: 875.409 Best individual: 0.392434 0.907518 0.817309 0.59059 0.92817 0.113932 0.966454 0.164744 0.378326 26.36 3.57123 2.76334 69.3002 4.46989 6.21514 29.0801 7.25821 2.70798 875.409
>
> Elapsed time: 44.7642 s

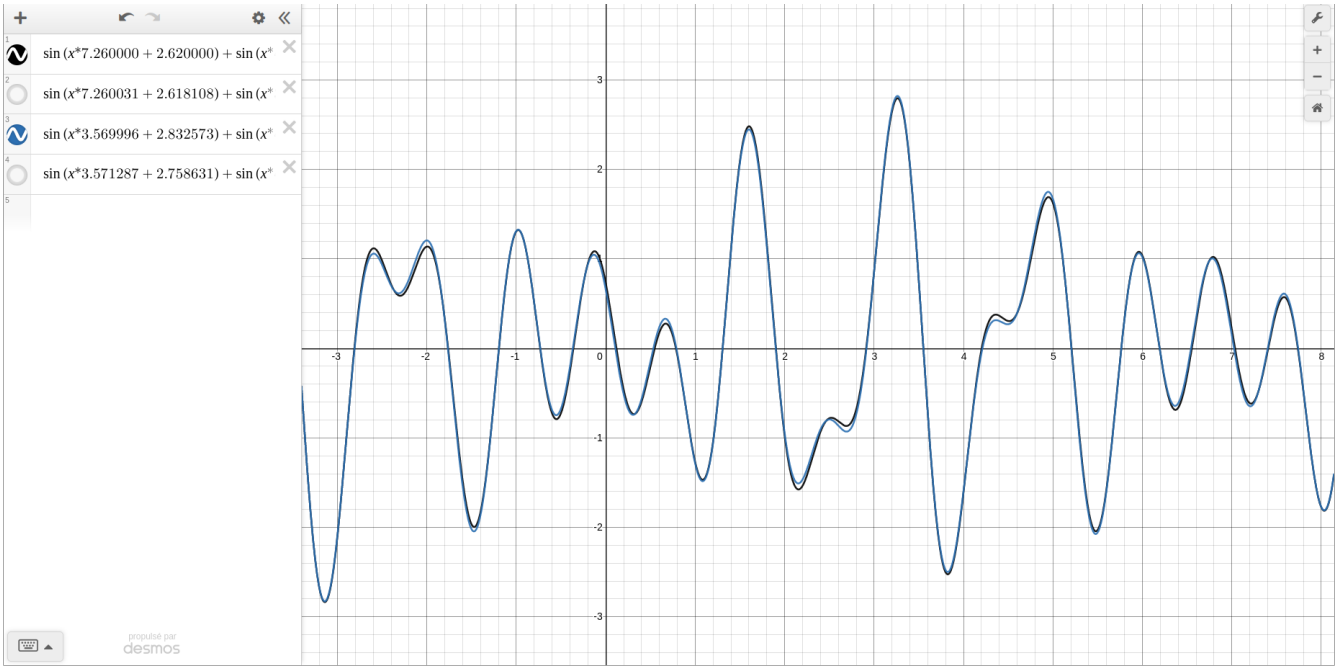
User's messages:

les probs qu'on change les valeurs de sinus sont:

0.392434 0.907518 0.817309 0.59059 0.92817 0.113932 0.966454 0.164744 0.378326

plot points de croisement entre deux sinus





Run configuration: Start time: 2022-01-15_18-01-43 Seed: 1642266103 Number of generations: 100 Population size: 10000 CPU Threads number: 1 Evaluation goal: 1

> Special options: Offspring population size: 10000 Mutation probability: 1 Crossover probability: 1 Selection operator: Tournament Selection pressure: 7 Reduce parent pressure: 2 Reduce offspring pressure: 1 Reduce parents operator: Tournament Reduce offspring operator: Tournament Surviving parents: 10000 Surviving offspring: 10000 Replacement operator: Tournament Replacement pressure: 2 Elitism: 1 Elite size: 1

Remote island model: Remote island model: 0 Ip file: ip.txt Migration probability: 0.3 Server port: 2929 Reevaluate immigrants: 0

> Result: Best fitness: 990.007 Best individual: 26.3356 3.57 2.83257 69.3822 4.47084 6.1677 29.1214 7.25923 2.65565 990.007

> Elapsed time: 46.5009 s

User’s messages:

Run configuration: Start time: 2022-01-15_23-25-47 Seed: 1642285547 Number of generations: 100 Population size: 10000 CPU Threads number: 1 Evaluation goal: 1

> Special options: Offspring population size: 10000 Mutation probability: 1 Crossover probability: 1 Selection operator: Tournament Selection pressure: 7 Reduce parent pressure: 2 Reduce offspring pressure: 1 Reduce parents operator: Tournament Reduce offspring operator: Tournament Surviving parents: 10000 Surviving offspring: 10000 Replacement operator: Tournament Replacement pressure: 2 Elitism: 1 Elite size: 1

Remote island model: Remote island model: 0 Ip file: ip.txt Migration probability: 0.3 Server port: 2929 Reevaluate immigrants: 0

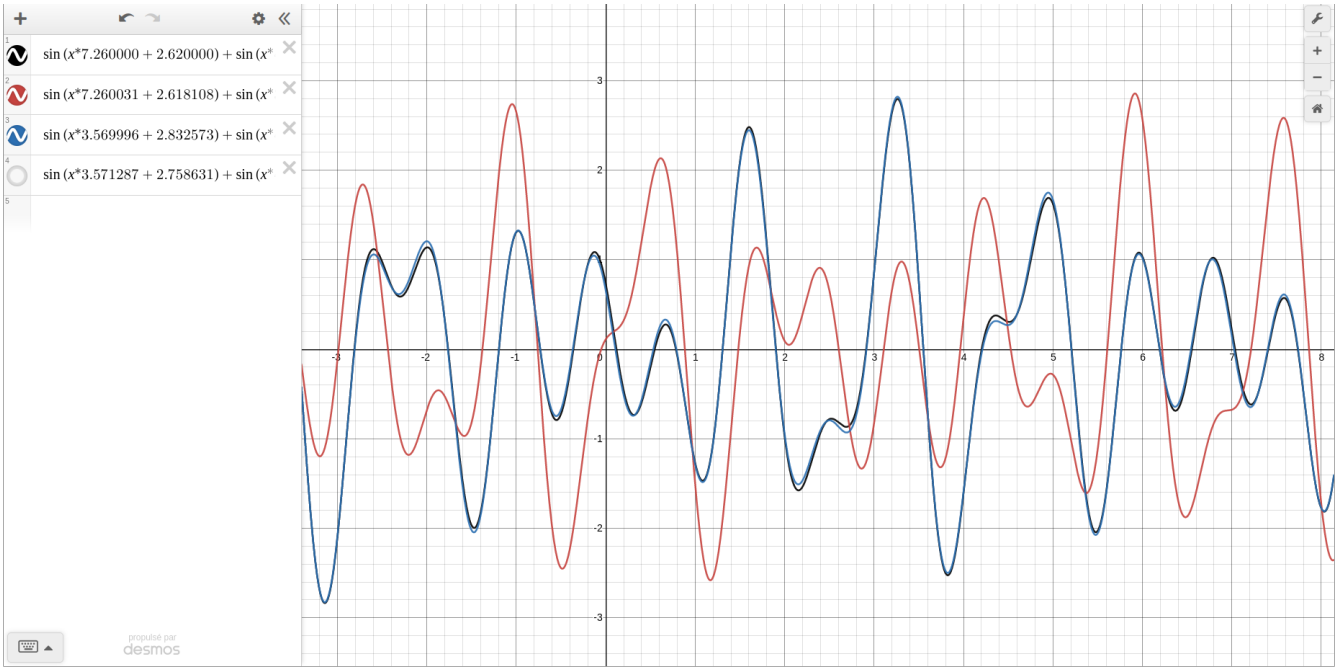
> Result: Best fitness: 951.453 Best individual: 0.82323 0.854452 0.0073731 0.850324 0.560475 0.122858 0.894589 0.50023 0.740916 26.3753 3.56829 2.93209 29.1245 7.25853 2.69902 69.367 4.47027 6.19691 951.453
>
> Elapsed time: 58.2559 s

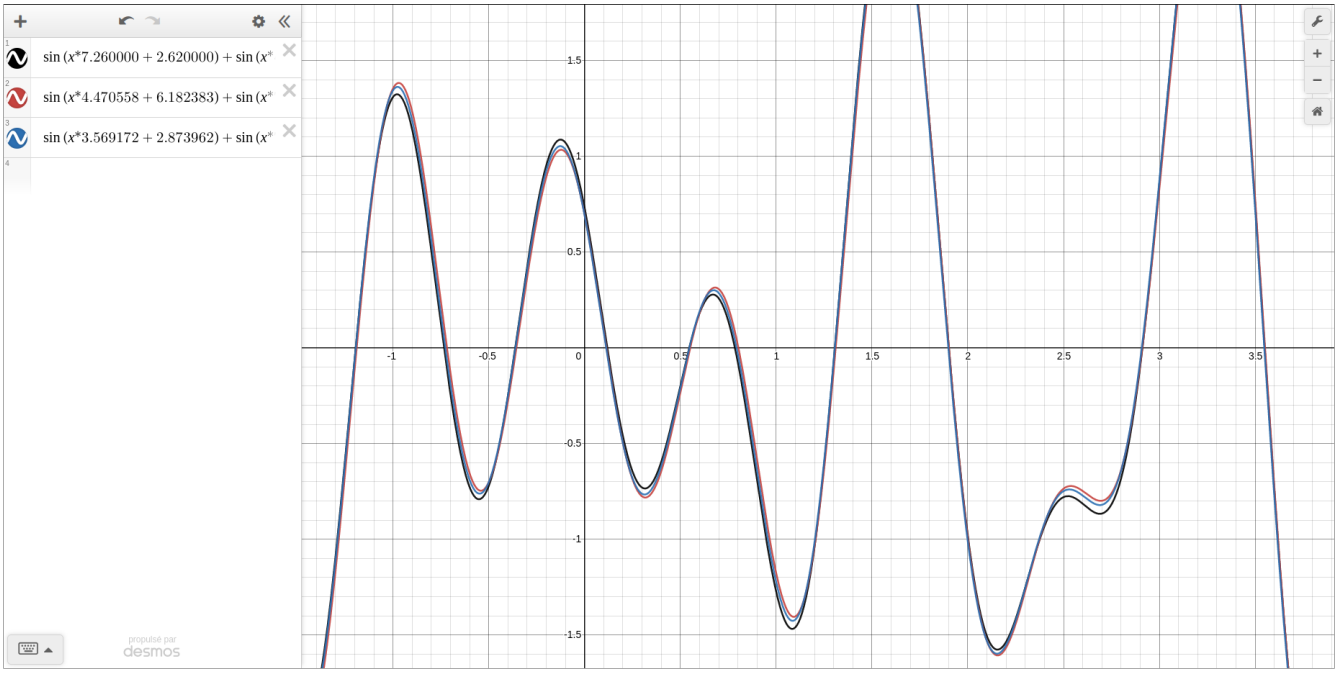
User's messages:

les probs qu'on change les valeurs de sinus sont:

0.82323 0.854452 0.0073731 0.850324 0.560475 0.122858 0.894589 0.50023 0.740916

voir différence



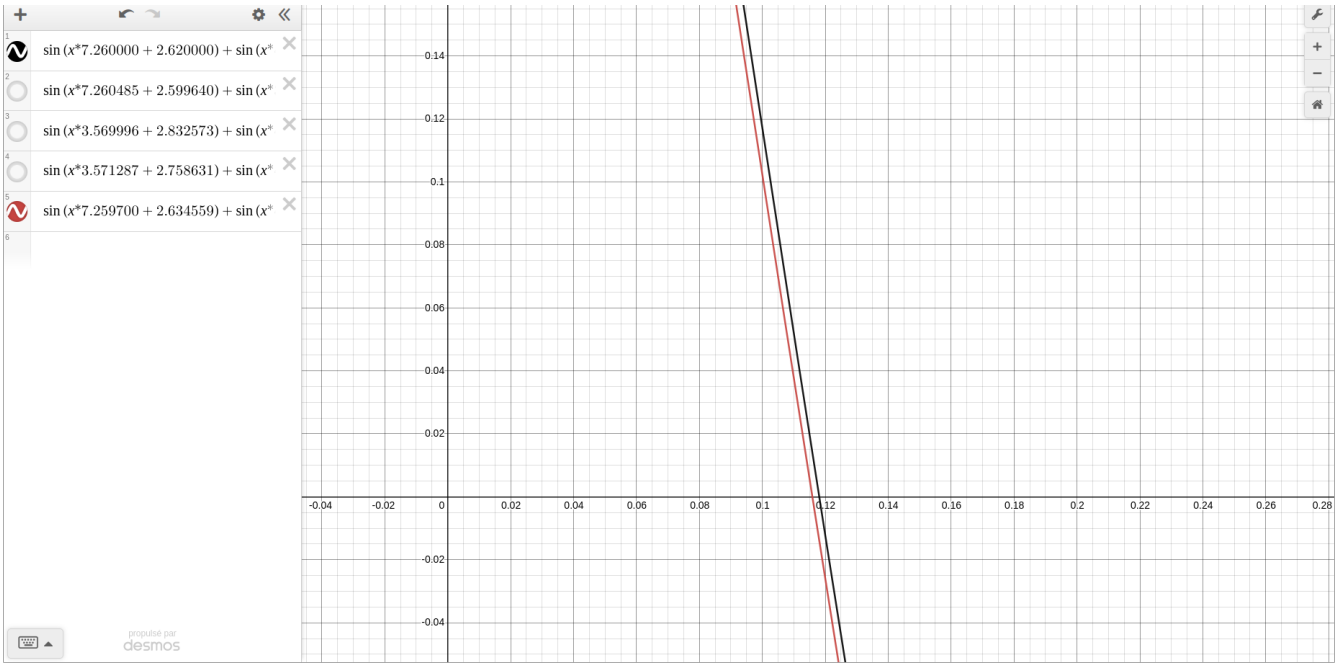


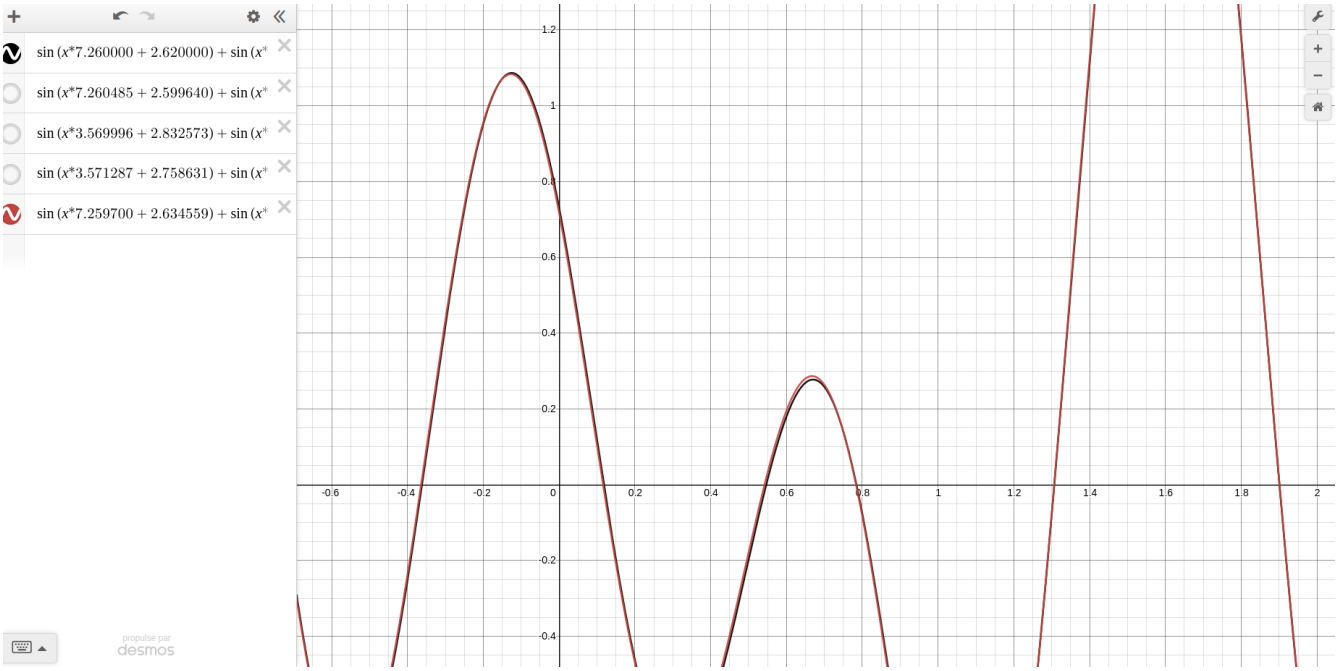
rouge est moins bon mais pas trop ! pas consitant!

question b

On va essayer avec 1000 generation si les probas sont proche de 0, cela montrera que nous aurons un croisement auto-adaptatif “intelligent” capable, de lui-même,

plots





Run configuration: Start time: 2022-01-15_23-40-03 Seed: 1642286403 Number of generations: 1000 Population size: 10000 CPU Threads number: 1 Evaluation goal: 1

> Special options: Offspring population size: 10000 Mutation probability: 1 Crossover probability: 1 Selection operator: Tournament Selection pressure: 7 Reduce parent pressure: 2 Reduce offspring pressure: 1 Reduce parents operator: Tournament Reduce offspring operator: Tournament Surviving parents: 10000 Surviving offspring: 10000 Replacement operator: Tournament Replacement pressure: 2 Elitism: 1 Elite size: 1

Remote island model: Remote island model: 0 Ip file: ip.txt Migration probability: 0.3 Server port: 2929 Reevaluate immigrants: 0

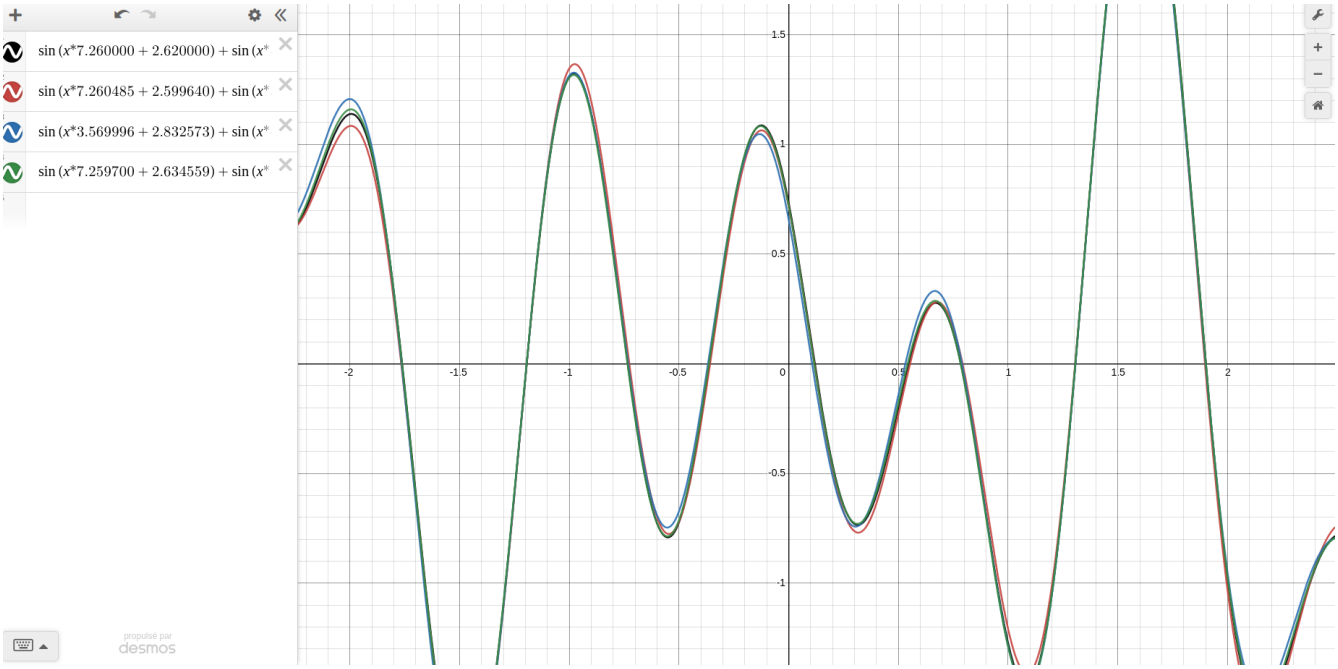
> Result: Best fitness: 205.46 Best individual: 0.00216911 8.55208e-05 0.00386071 0.00554889 0.00357392 0.00967946 0.00657251 0.00577217 0.00376092 29.1079 7.2597 2.63456 69.4019 4.47015 6.20277 26.4034 3.57014 2.82365 205.46
>
> Elapsed time: 431.881 s

User's messages:

les probs qu'on change les valeurs de sinus sont:

0.00216911 8.55208e-05 0.00386071 0.00554889 0.00357392 0.00967946 0.00657251 0.00577217 0.00376092

plot all



NOTE add some comm

Conclusion

les valeurs x0..x7 évoluent en même temps que le génome (par mutation et croisement) sont proche de 0 ce qui indique que notre modèle est auto-adaptive .....