Problem 6

Maximize $f(x,y) = sin^2(5\pi(x^{3/4} - 0.1)) - (y-1)^4$ $2 \le x \le 4$; $-1 \le y \le 2$; $x+y \le 5$

Maximum=1 at (x,y)=(3.575,1)

Category	Item	Content
Tuning Parameters and Setting Condition	Inertia Weight	1.0
	Acceleration Constants (Full model)	Self-confidence factor = 2
		Swarm confidence factor = 2
	Velocity Limit	K_V = **0.7**
	Swarm Size	**40**
	Termination Condition	Achieve Max **250** Iterations
Constraint Handling		
Penalty Static		MINUS 999
Adhere Strategy		Repair Outlier to Boundary X [2,4] Y [-1,2]
The Final Optimization Results		
Optimal Value		0.9999820659659432
Optimal for Decision Variable X		3.5750214245286918
Optimal for Decision Variable Y		1.0633541344148891

GA		PSO
《 see page2》	Effectiveness: Quality of solutions for optimal(final) value	《 see page2》
✗	Effectiveness: Quality of solutions for solution time	✓
✗	Efficiency: Speed of convergence	✓