Chaos Theory and at Math

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Abstract

This paper involves calculations involving Chaos Theory, Entropy, Order and Disorder. Economic and physical system involve making order from disorder, or chaos.

Keywords: Chaos Theory; Entrop; Oder; Disorder; AT Math

Introduction

In this paper ,we consider chaos in light of entropy. Chaos is involved in thigs from physics and the arrangement of the universe to economics.

$$X_{t+1} = kx(1-x)$$

growth rate, k=(-7)

$$1-(1/k) = [1+1/(-7)]$$
$$x = t = 1/2$$
$$x_{t+1} = (-7)(1/2)(1-1/2) = -7/4 = -1.75 rads = 100.267°$$

But,

$$s = E \times t = |E||t| \sin \theta$$
$$1/s = 1/(4/3) = 0.75 \; critical$$

$$1/s = 1/t = E$$

Since, s=t

$$E = 1/\sin \theta = 1/\sin 100.267° = 101.627 = 1/0.984$$

Put, $t = 0.984$

Fair Coin Equation

$$t^2 - t - 1 = E$$
$$(0.984)^2 - (0.984) - 1 = 101.576$$

k>3=chaotic
k=(-7)

$$t^2 - t - 1 = 101.576$$

t=1.064 E=0.94
t=-0.964 E=-0.863

$$t^2 - t - 1 = E = 1$$

$$t^2 - t - 2 = 0$$
t=-1;2

$$2 = -7(x)(1-x)$$
$$2 = 7(x - x^2)$$
$$2/7 = x - x^2$$

$$x^2 - x - 2/7 = 0$$

$$x = t = 1.0345; 0.2319$$
1/1.0345=0.9666
1/(-2319)=-4.312

$$M = Ln\ t = Ln\ 23.19 = 3.143 \sim \pi$$
$$E^2 + E - 2 = t$$
$$(1/.2319)^2 + (1/.2319) - 2 = 4.312^2 - 4.312 - 2 = 1.616 \sim 1.618 \Rightarrow GMP$$
$$t^2 - t - 1 = E$$

$$(1.618)^2 - 1.6718 - 1 = 0 = E$$

$$t^2 - t - 1 = E$$

$$(0.2319)^2 - (0.2319) - 1 = 117.8 \sim \sum v = Sum\ of\ the\ frequencies$$

$$M = Ln\ t = 117.8$$

$$M = Ln\ 117.8 = 7.5\ (Chaos\ Blows\ Up)$$

Entropy and Order and Disorder

$$S = k_B\ Log\ \Omega$$
$$= 0.75(118.9)$$
$$= 89.175 = c^2$$

$$Disorder = C_{Disorder} / C_{Information} = 89.175/7 = 127.3 = \rho = 4/\pi = Density$$
$$Order = 1 - C_{Order} / C_{Information} = 1 - 1/7 = 0.857$$

$$Order + Disorder = 0.857 + 127.3 = 12.8157 = u\overline{V} = Universal\ Vector$$
$$C_O / C_I + C_D / C_I = 1/7 + 4/\pi = 1415 = \sqrt{2} = E = sin\ 45° + cos\ 45°$$

Conclusion

We see that AT math provides a light on Chaos Theory which could help us solve problems of disorder and order.