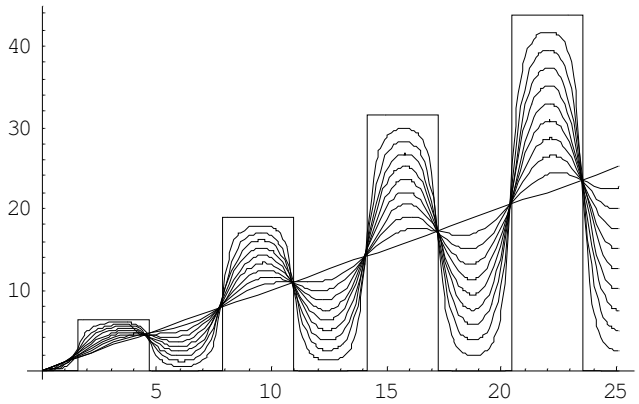
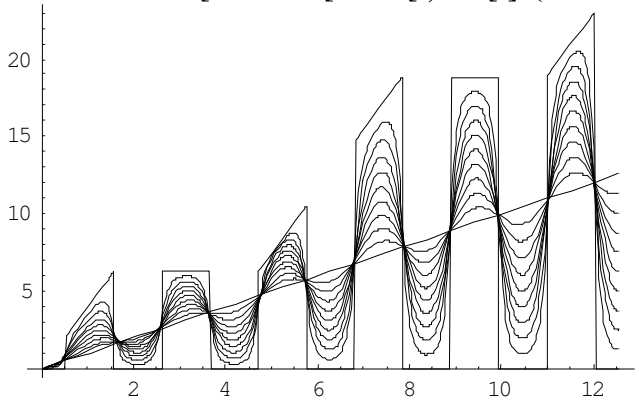
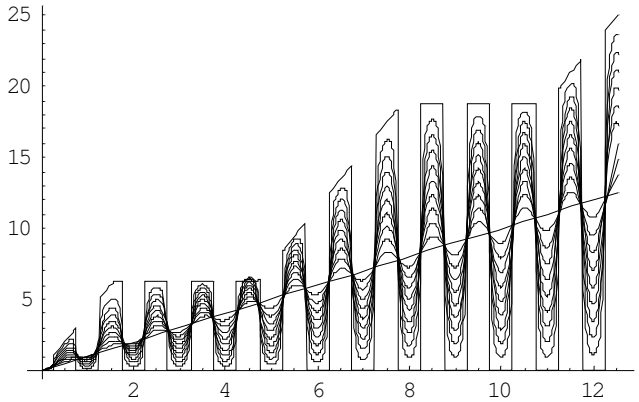
dex[t]=1 - 0.1u Cos[t] / Sqrt[1 - (0.1u Sin[t])^2]
ParametricPlot[Evaluate[Table[t, dex[t]*(t + ArcSin[0.1u Sin[t]])],{u, 0, 10}, {t, 0, 8Pi})]



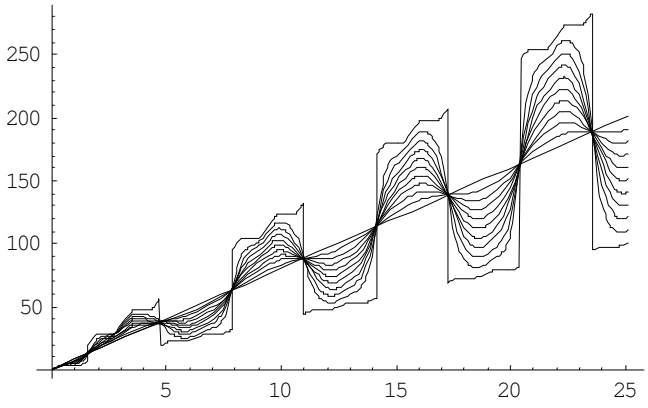
dex[t]=1 - 0.1u Cos[3t] / Sqrt[1 - (0.1u Sin[3t])^2]
ParametricPlot[Evaluate[Table[t, dex[t]*(t + ArcSin[0.1u Sin[t]])],{u, 0, 10}, {t, 0, 4Pi})]



dex[t] =1 - 0.1u Cos[2Pit] / Sqrt[1 - (0.1u Sin[2Pit])^2]
ParametricPlot[Evaluate[Table[t, dex[t]*(t + ArcSin[0.1u Sin[t]])],{u, 0, 10}, {t, 0, 4Pi})]



dex[t]=1 - 0.1u Cos[t] / Sqrt[1 - (0.1u Sin[t])^2]
ParametricPlot[Evaluate[Table[t, (dex[t] + 1)*(4t + ArcSin[0.1u Sin[4t]])],{u, 0, 10}, {t, 0, 8Pi})]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