Answers

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1 Task: 1

- What does it do?
  it prints two not sufficiently seeded "random" variables

- The difference between the methods is that rand() returns a random number and the other method

  - rand() returns a random integer between 0 and RANDMAX
  - gsl_rng_mt19937 is a generator that generates random numbers

  In the code the generator is passed to a (Distribution)function that uses this generator to evaluate a random number depending on the Distribution specified in the function.

- What happens if you remove the expression (double)?
  The division operation $\frac{rand()}{RANDMAX}$ does $\frac{intSmall}{intBig}$ and should result in a double, but with no cast it will be floored to 0.

- Is there a direct function to generate normally distributed random variables?
  double gsl_ran_gaussian_pdf(const gsl_rng * r, double sigma) command

2 Task: 3

The Plot should simulate the occurencedensity of points of our 1.000.000 samples which are normally distributed. But the picture shows that all points are over the exact Plot of the density function what ist nearly impossible with so many samples. Therefor we conclude that the plot was made with different parameters.