Density Parameters
Add more functions in 'density_formula.py'

1. Sphere:
- rho_1 – density of sphere
- radius_1 – radius of sphere

2. Cylinder:
- rho_1 – density of cylinder
- radius_1 – radius of cylinder
- Length (z_dim) – length of cylinder

Make sure z_dim = 2*radius_1

3. Core Shell:
- rho_1 – inside density
- rho_2 – outside density
- radius_1 – radius of the outside of the cylinder
- radius_2 – radius where the density changes inside the cylinder
- Length (z_dim) – length of cylinder

4. Gaussian cylinder:
- radius_1 – The distance from the centre to the edge of the box.
- radius_2 – standard deviation of the distribution
- Length (z_dim) – length of cylinder

5. Chopped Cone:
- radius_1 – furthest from detector (-Z direction)
- radius_2 – closest to detector (+Z direction)

radius_1 must be greater than radius_2!!!!
(just rotate it by 180 degrees if you need to.)
- rho_1 – density inside the chopped cone
- Length (z_dim) – length of the cone

6. Hexagonal Prism:
- radius_1 – the the distance from the centre to the corner
- Length (z_dim) – length of the prism
- rho_1 – density inside the prism

7. Rectangular Prism:
- radius_1 - width
- radius_2 – height

radius_1 must be greater than radius_2!!!!!
- Length (z_dim) – length
- rho_1 – density inside the prism

8. String of bubbles:
- radius_1 - radius of the bubbles
- radius_2 – distance between the centres of two bubbles
- rho_1 – density inside the bubble

9. Randomly chopped up cylinder:
- radius_1 – radius of cylinder
- radius_2 – width of the gap
- rho_1 – density inside the chopped cone
- rho_2 – number of gaps

10. Custom defined radius:
- How to enter data:
  - make a txt file.
  - Open it and put in ONE NUMBER PER LINE IN METERS!!
  - rename it to 'custom.csv'
- How the function works:
  - The program opens 'custom.csv' as a list.
  - Each element is given a value from -z_dim/2 to z_dim/2 at equal increments
  - The first element will be at -z_dim/2 (away from detector)
  - The last element will be at z_dim/2 (closest to detector)
  - A linear fit goes between two adjacent points in the list
- Length (z_dim) – length of shape.
- rho_1 – density inside the shape

11. Double Slit
Consider the outside and inside edges of the slits.
- radius_1 – distance between the outsides of the slits
- radius_2 – distance between the insides of the two slits.
- Length (z_dim) – length of slits
- If you want to make the slits less wide, make a sequence with one frame, the variable y_dim, and enter the height of the slits into start sequence.

12. N-Gon Truncated Cone.
It starts as an n-gon at one end, and goes to a smaller n-gon at the far end.

- radius_1 – On the large n-gon, it is the distance from the origin to a point
- radius_2 – On the small n-gon, it is the distance from the origin to a point.
- Length (z_dim) – length of shape
- rho_1 – density of points inside the shape
- rho_2 – number of sides (i.e. a hexa-cone would have 6 sides, octa-cone would have 8 sides)

13. Sine Shaped Oscillations

- z-dim – length of shape
- radius_1 – distance from origin to a peak
- radius_2 – distance from origin to a trough
- rho_1 – density inside the shape.
- rho_2 – number of oscillations

14. Double Cone

- z-dim – length of shape
- radius_1 – Radius at the ends
- radius_2 – Radius in the centre

Analytic Parameters
Add more in 'analytic_formula.py'

1. Sphere:
- rho_1 – density of sphere
- radius 1 – radius of sphere

2. Cylinder:
- rho_1 – density of cylinder
- radius 1 – radius of cylinder

3. Core Shell:
- rho_1 – inside density
- rho_2 – outside density
- radius 1 – radius of the outside of the cylinder
- radius 2 – radius where the density changes inside the cylinder

4. Gaussian:
- radius_1 – distance from the centre to the edge of the box.
- radius_2 – standard deviation of the distribution