1) For an unperturbed linear chain, what ratio connects the square of the radius of gyration to the square of the statistical segment length?

   a. \( \frac{N}{6} \)
   
   b. \( \frac{N^2}{6} \)
   
   c. \( N \)
   
   d. \( \frac{L}{6} \)
   
   e. \( \frac{Ll_p}{3} \)

2) If a polymer is placed into a poor solvent, it tends to collapse upon itself. If this is the case, one would expect the radius of gyration to scale with the number of repeat units to which power?

   a. 0.2
   
   b. 0.33
   
   c. 0.5
   
   d. 0.6
   
   e. 1.0