

Problem Set 9: Angular momentum and so forth

Instructions:

1. Answer all questions below. Follow the problem-solving template provided.
2. You may collaborate, but everyone must turn in their own work
3. All problems are due 13 March 2009 at the end of the day.

1. A particle begins at the origin and moves successively in the following directions:

- 1 unit to the right ($+x$)
- $\frac{1}{2}$ unit up ($+y$)
- $\frac{1}{4}$ unit to the right
- $\frac{1}{8}$ unit down
- $\frac{1}{16}$ unit to the right
- *etc.*

The length of each move is half the length of the previous move, and movement continues in the “zigzag” manner described. Find the coordinates of the point to which the zigzag converges.

2. Halliday, Resnick, & Walker, problem 11.14
3. Halliday, Resnick, & Walker, problem 11.16
4. Halliday, Resnick, & Walker, problem 11.35
5. Halliday, Resnick, & Walker, problem 11.41
6. Halliday, Resnick, & Walker, problem 11.66
7. Halliday, Resnick, & Walker, problem 11.67