Quiz 12

MATH 139-02
Thursday, April 1, 2004

1. Evaluate $\sum_{i=2}^{5} \frac{i^2+1}{i}$. You do not need to simplify your answer.

   Solution: $\sum_{i=2}^{5} \frac{i^2+1}{i} = \frac{2^2+1}{2} + \frac{3^2+1}{3} + \frac{4^2+1}{4} + \frac{5^2+1}{5}$.

2. A car slows to a stop in 6 seconds. The velocity of the car at 2-second intervals appears in the table below.

Elapsed time (sec)	0	2	4	6
Velocity (ft/sec)	88	45	16	0

   (a) Give upper and lower estimates for how far the car travelled during this time interval. **Be sure to show your work!**

   Solution: The upper estimate is $2(88+45+16) = 298$ feet. The lower estimate is $2(45+16+0) = 122$ feet.

   (b) On a sketch of velocity against time, show the lower and upper estimates of part (a).

   Solution: Each should have three rectangles with bases 2 seconds wide and heights equal to the appropriate velocity.