1. Suppose a demand function is given by the equation $q = 10000 - p^2$ where q is the number of items and p is the price in dollars per item. Determine the elasticity when the price is $50 and again when the price is $60. At each price, explain whether you should increase the price or decrease the price in order to increase revenue? *(7 points)*

2. The table shown below gives the velocity $v(t)$ of a car (in feet/second) at time t (in seconds). Using the the given data, find upper and lower estimates (using left sums and right sums) of the total distance covered by the car until it comes to a stop. *(7 points)*

t	0	2	4	6	8	10
$v(t)$	105	104	99	84	53	0

3. Find the exact value of

$$\int_0^6 f(x)\, dx$$

for the given function that consists of straight-line segments. *(6 points)*