7. [16 points] Janet is an artist who produces and sells prints of her artwork. If Janet sells her prints for $17 each, then she will sell 340 prints. Janet is considering whether she should change the price. She takes a survey and concludes that for each price increase of 75 cents, she will sell 10 fewer prints.

    a. [4 points] Find a formula for Janet's revenue, $R(x)$, in terms of x, the number of 75 cent price increases.

    b. [4 points] Janet plans to produce exactly the number of prints that her survey predicts she will sell. Her costs include $2 per print, along with $500 in fixed costs. Find a formula for $C(x)$, Janet's total costs, in terms of x, the number of 75 cent price increases.

    c. [8 points] Use the methods of calculus to determine what price Janet should set for her prints if she wants to maximize her profit.