

1. A company manufactures and sells play ground swing sets for children. From experience the company estimates that it can sell x swing sets per week if it sells each swing set for $D(x) = -0.25x + 5.5$ thousand dollars. The cost, in thousands of dollars, to manufacture x swing sets is known to be given by the cost function $C(x) = -0.15x^2 + 4.3x + 2$.

a. Find the revenue function $R(x)$ and the profit function $P(x)$ when manufacturing and selling x swing sets per week.

b. Sketch the graph of the profit function and use it to find all values of x for which the production of x swing sets is profitable.