

4. Consider the flight of an aircraft used to simulate weightlessness. Its flight path can be approximated by the following equation: $h = -10x^2 + 300x + 9750$, where h is the height in meters and x is the time in seconds.

a. After how many seconds will the aircraft land on the ground?

b. What is the altitude after 20 seconds?

c. At what time is the plane at 8500 meters?

5. The graph below describes a small business profit as related to the selling cost of the items sold. The profit is represented by the function $f(x) = -2x^2 + 80x$, where $f(x)$ is the total profit and x is the selling cost of the items sold.

a. What is the maximum profit for the small business?

b. What is the selling cost for a profit of \$600?

c. At what point does the function start to decrease? What could be a reason for this decrease to happen?

