This is a variation of exercise 7.4. The bookseller now has reasons to believe that the demand is two times more likely to fall between 120 and 360 than elsewhere in $[0, 480]$. He wants to compute how much books he must buy, and what profit he could expect.

1. Find the density function $f(z)$ and graph it.

2. Find the cumulative distribution function $F(z)$ and graph it.

3. How many copies should order the bookseller using model of section 7.1?

4. What is the expected profit if advertising costs are $k = $200?

You do not need to use Matlab to plot the functions.