

0. Read the problem and underline key terms.

Ex: Find the dimensions of the largest rectangular area you can enclose if you have 80 ft of fencing.

1. Draw and label a diagram. Introduce notation and clearly state what each variable represents.

2. Write down equations/functions for any quantities mentioned. If a fixed value is given/known, write it down.

3. Clearly state the following sentence, filling in the appropriate equations:

Maximize(or Minimize) $\frac{\text{FUNCTION for QUANTITY}}{\text{to be optimized}}$

subject to $\underline{\text{CONSTRAINT(S)}}$.

4. Use the CONSTRAINT(S) to write the QUANTITY FUNCTION as a function of *one* variable only.
It is often helpful to simplify the function before differentiating.

5. Determine the domain for this function.

6. Use Calculus techniques to find the absolute maximum (or minimum) values.