1. Bert's office uses a lot of staples. He can purchase a case of staples for \$25. It costs \$5 to place an order and Bert pays \$0.50 to inventory a case of staples (base inventory costs on average inventory making all of the standard assumptions). Finally, Bert's office needs 100 cases of staples each year. Let $C(x)$ be the annual cost function.

   $C(x) =$ _____

   List **ALL** of the critical points of $C(x)$ including "irrelevant" critical points (points outside the domain of reasonable x values). Round each to 3 decimal places.

   Critical points: $x =$ _____

   Bert's **ideal** EOQ is $x =$ _____ and minimum annual cost is $C(x) =$ \$_____.

   ALPHA commands used:

2. Let $f(x) = \begin{cases} -x^2 + x + 4 & x \le 2 \\ x - 2 & x > 2 \end{cases}$ Sketch the graph of $y = f(x)$ where $-2 \le x \le 4$.

   $f(x)$ has _____ critical points.
   [You can tell by just looking at the graph.]

   Example of a piecewise function In ALPHA: The absolute value function can be defined piecewise as

   $$\texttt{piecewise[\{\{x, x >= 0\}, \{-x, x < 0\}\}]}$$