1. \( \max f = 4 \). It occurs at \( x = 2 \).
   \( \min f = 0 \). It occurs at \( x = 4 \).
   \( f \) has local maxima at \( x = 2 \) and for all \( x \) in \([6, 8]\).
   \( f \) has local minima at \( x = 4 \), at all \( x \) in \((6, 8]\), and
   at \( x = 10 \).

3. a. no maximum, \( \min f = -6 \) at \( x = -3 \).
   b. \( \max f = \frac{2}{3} \) at \( x = -1 \), no minimum.
   c. \( \max f = \frac{2}{3} \) at \( x = 1 \), no minimum.
   d. \( \max f = 6 \) at \( x = 3 \), \( \min f = -\frac{2}{3} \) at \( x = 1 \).