3. [17 points]
   a. [4 points] Circle all graphs in which the graphed function appears to be periodic with more than one period shown.

   ![Graphs](image1)

   **b. [2 points]** Find the period of the function in the following graph:

   ![Graph](image2)

   The period is \(4\).

   **c. [5 points]** Find the midline and amplitude of the function graphed in **b**.

   The midline is \(y=2.5\).

   The amplitude is \(1.5\).

For parts **d.** and **e.** suppose \(C(t)\) is the total number of calls received by a call center \(t\) hours after 8:00am on a normal day. Each sentence describes the number of calls the center receives on a particular day; circle the expression that corresponds to the given description.

   **d. [3 points]** “The call center received 20 more calls than normal right at the beginning of the day, but otherwise it was a normal day.”

   \[
   \begin{align*}
   C(t) + 20 & \quad C(t + 20) & \quad 20C(t) & \quad C(20t) & \quad \text{None of these}
   \end{align*}
   \]

   **e. [3 points]** “The center was closed until noon, and at all times during the afternoon the call volume was twice what it normally would have been 4 hours earlier.”

   \[
   \begin{align*}
   2C(t + 4) & \quad C(2t + 8) & \quad C(2t + 4) & \quad 2C(t - 4) & \quad \text{None of these}
   \end{align*}
   \]