7. (10 pts.) On the axes provided below, sketch at least two full periods of the graph of the trigonometric function
\[ f(x) = 1 + 2\cos\left(\frac{2x}{3}\right). \]

Be sure to indicate the choice of units on each axis.

\[ \begin{array}{c}
\text{(b) What are the amplitude and period of } f? \\
\quad \text{Amplitude } = 2 \quad \text{Period } = 3
\end{array} \]

\[ \begin{array}{c}
\text{(c) Find a formula for the function } g \text{ whose graph is obtained by shifting the graph of } f \text{ down by two units and to the right by two units.} \\
\quad g(x) = -1 + 2\cos\left(\frac{2x}{3} - \frac{x}{2}\right)
\end{array} \]

\[ \begin{array}{c}
\text{(d) Find a formula for the trigonometric function, } k, \text{ whose graph has all of the following features} \\
\quad \bullet \text{ the same midline and amplitude as } f, \\
\quad \bullet \text{ twice as many peaks and valleys as } f, \text{ and} \\
\quad \bullet \text{ at least one of its peaks coincides with a peak of } f. \\
\quad k(x) = 1 + 2\cos\left(\frac{4x}{3}\right)
\end{array} \]