6. [9 points] The average high temperature in Anchorage, Alaska increases from a low of 15 degrees Fahrenheit at the beginning of the 6th week of the year to a high of 61 degrees Fahrenheit at the beginning of the 32nd week. For your reference, there are 52 weeks in a year. Suppose the average high temperature in Anchorage w weeks after the beginning of the first week of the year can be modeled by a sinusoidal function $T(w)$.

   a. [4 points] Find the period, amplitude and midline of the function $T(w)$.

The period is_____.

The amplitude is_____.

The midline is_____.

   b. [5 points] Give a possible formula for $T(w)$. Leave all constants in exact form.

$T(w) =$_____.