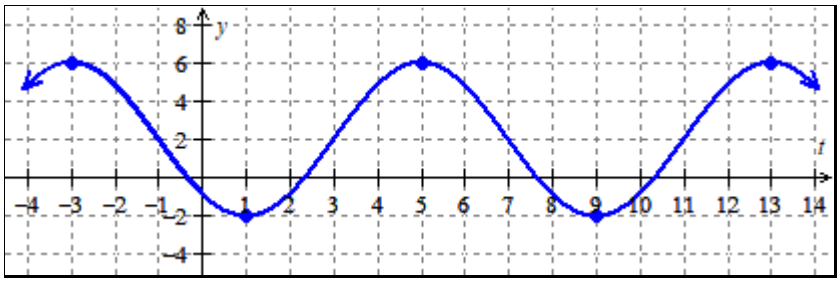
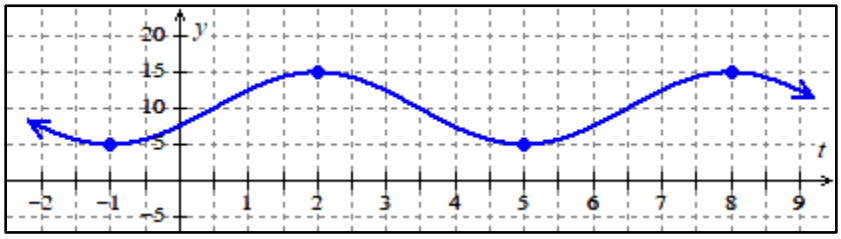
Practice Worksheet: Periodic Functions

1. Determine the period, midline and amplitude of the function $y = f(t)$ graphed below. Note that the following points are on the graph: $(-3, 6)$, $(1, -2)$, $(5, 6)$, $(9, -2)$, and $(13, 6)$.



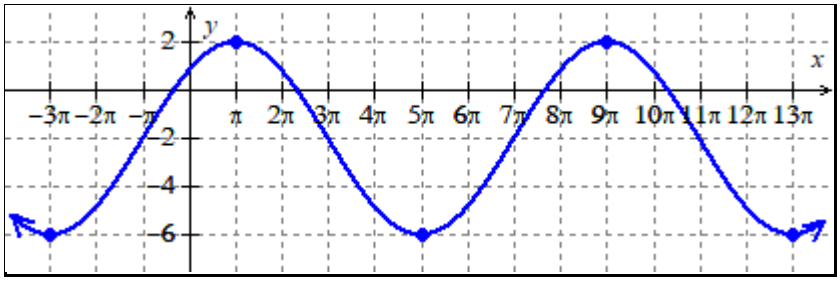
A graph of $y = f(t)$.

2. Determine the period, midline and amplitude of the function $y = m(t)$ graphed below. Note that the following points are on the graph: $(-1, 5)$, $(2, 15)$, $(5, 5)$, and $(8, 15)$.



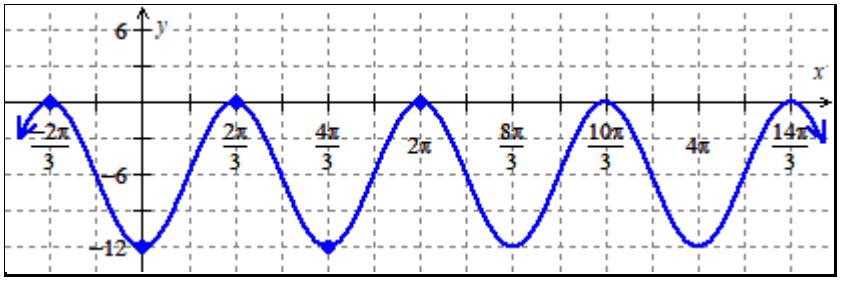
A graph of $y = m(t)$.

3. Determine the period, midline and amplitude of the function $y = p(x)$ graphed below. Note that the following points are on the graph: $(-3\pi, -6)$, $(\pi, 2)$, $(5\pi, -6)$, and $(9\pi, 2)$.



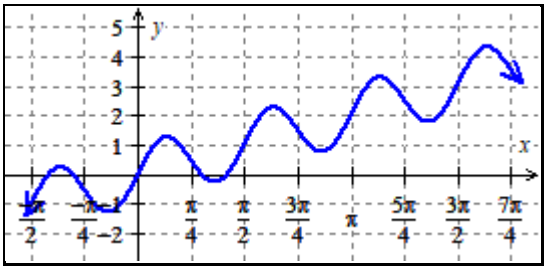
A graph of $y = p(x)$.

4. Determine the period, midline and amplitude of the function $y = g(t)$ graphed below. Note that the following points are on the graph: $\left(-\frac{2\pi}{3}, 0\right)$, $(0, -12)$, $\left(\frac{2\pi}{3}, 0\right)$, and $\left(\frac{4\pi}{3}, -12\right)$.

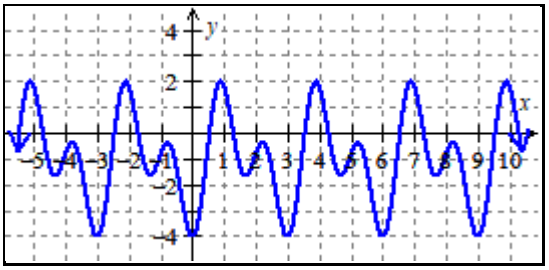


A graph of $y = g(t)$.

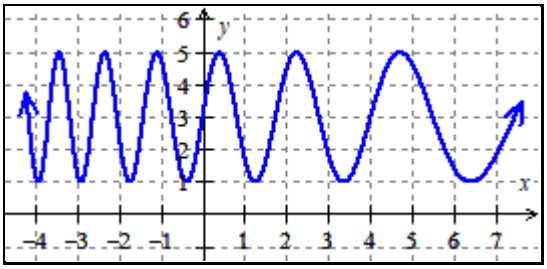
5. Determine which of the functions graphed below are periodic functions and find the period, midline, and amplitude of the periodic functions.



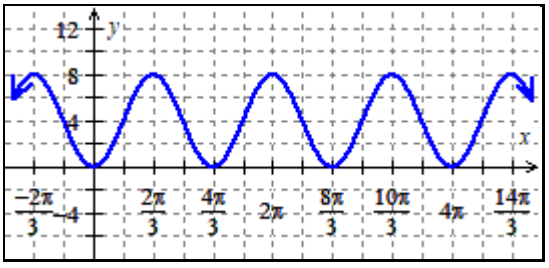
$y = A(x)$



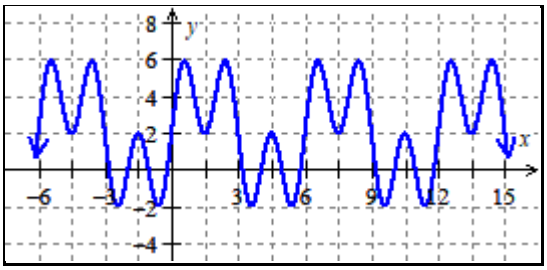
$y = B(x)$



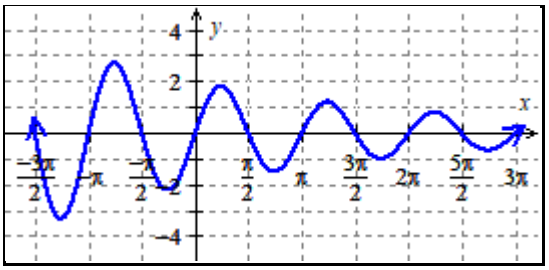
$y = C(x)$ is



$y = D(x)$



$y = E(x)$



$y = F(x)$

6. There's a Ferris wheel with a diameter of 80 feet. The wheel rotates at a constant rate, and completes a full rotation every 20 minutes. The wheel is lifted 10 feet above the ground level, and passengers load into carriages at the lowest point in the wheel's travel (so passengers start their trip 10 feet above the ground). Determine the period, midline and amplitude of the function that associates amount of time a passenger spends in a carriage travelling around the wheel with the height (in feet) above the ground of such a passenger.

7. Describe an activity in your life or that you're familiar with that's periodic (or approximately periodic). What's the period? Is there a midline and amplitude? (Not all periodic behaviors have midlines or amplitudes.) If you can't think of anything else, describe the high temperature in Portland each day.