Graphing Exercise

1. For the given function \( f \), find its amplitude and period, and graph the function. On your graph, for at least one cycle, indicate the \( x \)-coordinate of where the the maximum and minimum value(s) occurs, and where the function intercepts its neutral position.

a. \( f(x) = -2 \sin(x + 1) \).
b. \( f(x) = \sin(-x + 1) \).
c. \( f(x) = 2 \sin(\pi x + 1) \).
d. \( f(x) = -2 \sin(2x - \pi) - 3 \).
e. \( f(x) = \sin\left(\frac{x}{2} - 1\right) \).
f. \( f(x) = \sin\left(-\frac{x}{\pi} + 1\right) - 1 \).
g. \( f(x) = 2 \sin\left(\frac{\pi x}{2} + 2\right) \).
h. \( f(x) = \cos(-x + 1) + 2 \).
i. \( f(x) = -2 \cos\left(\frac{\pi x}{3} - \pi\right) \).
j. \( f(x) = \cos(-x - 2) - 1 \).
k. \( f(x) = \cos\left(\frac{2x}{3} - 1\right) + 2 \).
l. \( f(x) = -\cos\left(-\frac{x}{2} + 1\right) \).
m. \( f(x) = \cos(-3x + 1) \).
n. \( f(x) = \cos(x - \pi) \).

2. Let \( f(x) = \tan(x - 4) \).

a. Find the period of \( f \).
b. Graph \( f \). In your graph, for at least one cycle of \( f \), indicate the coordinates of the \( x \)-intercept, and the location of the vertical asymptotes.

3. Let \( f(x) = 2 \sec(\pi x + 1) \).

a. Find the period of \( f \).
b. Graph \( f \). In your graph, for at least one cycle of \( f \), indicate the coordinates of the \( x \) maximum and minimum values of \( f \), and the location of the vertical asymptotes.