1. (6 points) The table gives the values of a function f.

x	2	4	6	8
$f(x)$	15	9	6	2

(a) If f could be a linear function, find a possible formula for f. If not, explain why not.

The function is not linear because $\frac{\Delta y}{\Delta x}$ is not constant.

Ans: $\frac{15-9}{-2} = -3 \neq \frac{9-6}{-2} = \frac{-3}{2}$

(b) If f could be an exponential function, find a possible formula for f. If not, explain why not.

$\frac{9}{15} = \frac{3}{5} \neq \frac{6}{9} = \frac{2}{3} \neq \frac{2}{6} = \frac{1}{3}$

The function is not exponential because ratios of y-values over equally-spaced x-values are not constant -- ie; not a constant % rate of change.

2. (8 points) For the periodic function with the graph given below, determine:

(a) the period of the function; ____6____

(b) the amplitude of the function; ____2____

(c) a possible formula for the function. $f(x) =$ ____$2 \cos\left(\pi\left/ _\_\_\right.\right)$____