Spring 2025 Laird Homework 3

1 True/False: Identify Periodic Functions

For each function below, determine if it is periodic by writing TRUE or FALSE.

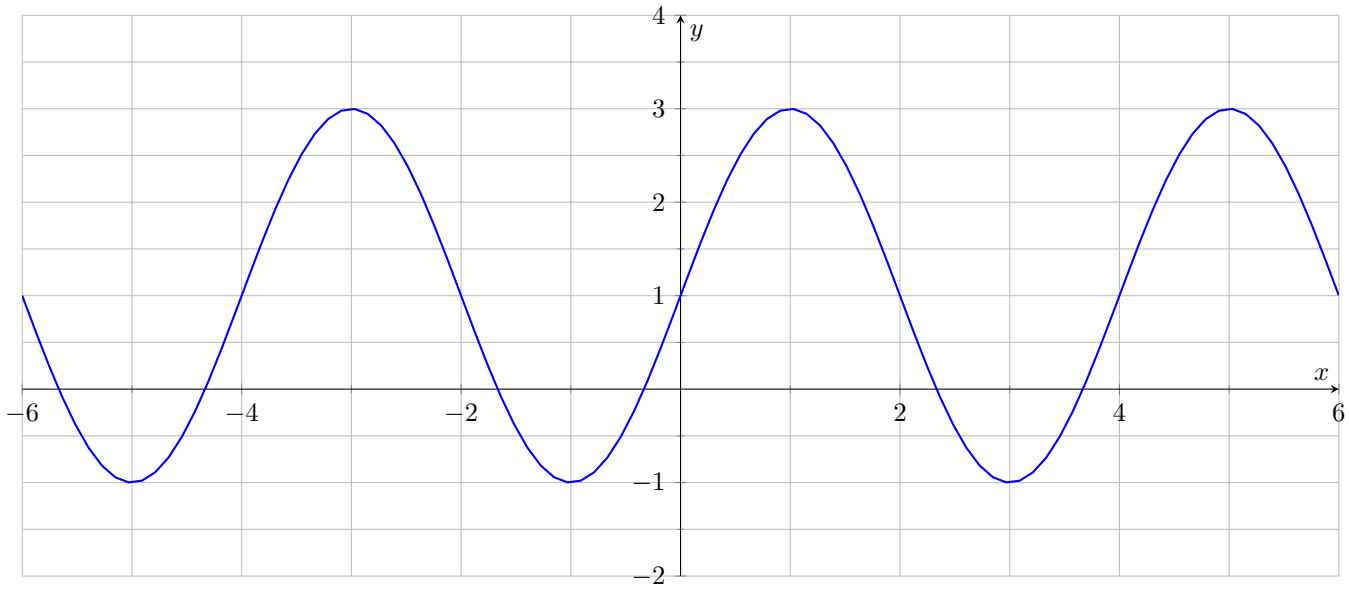
1. $f(x) = e^x$ 2. $g(x) = x^3$ 3. $h(x) = \sin(2x)$ 4. $r(x) = \frac{1}{x+1}$ 5. $m(x) = \tan(x)$

2 Analyzing Sinusoidal Functions

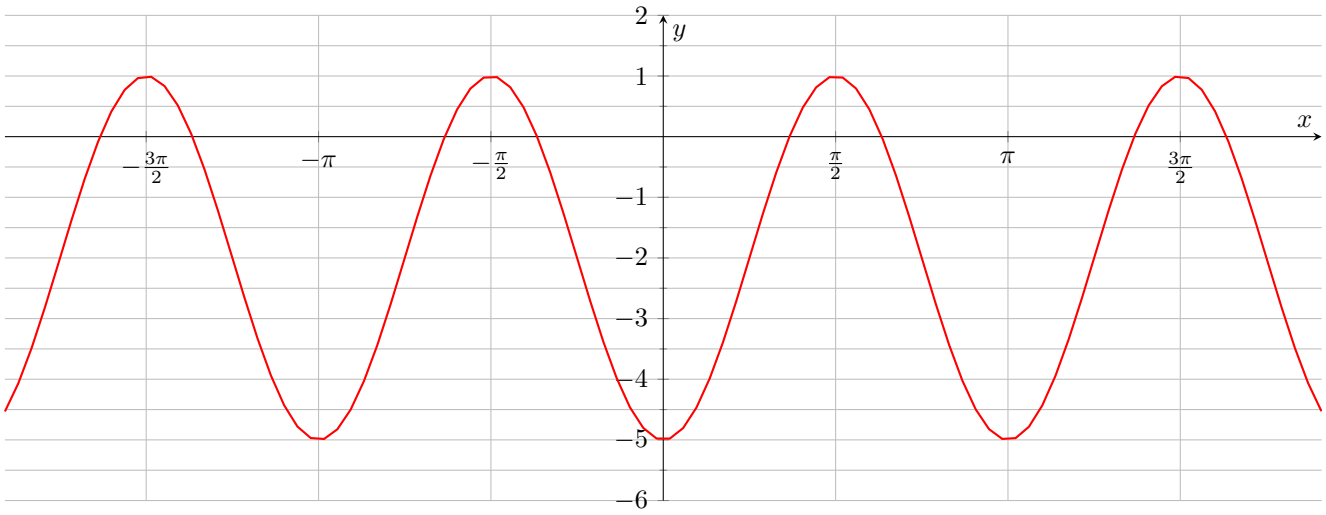
For each graph below, identify:

a) Period b) Frequency c) Midline equation d) Amplitude e) Function equation (using the specified type)

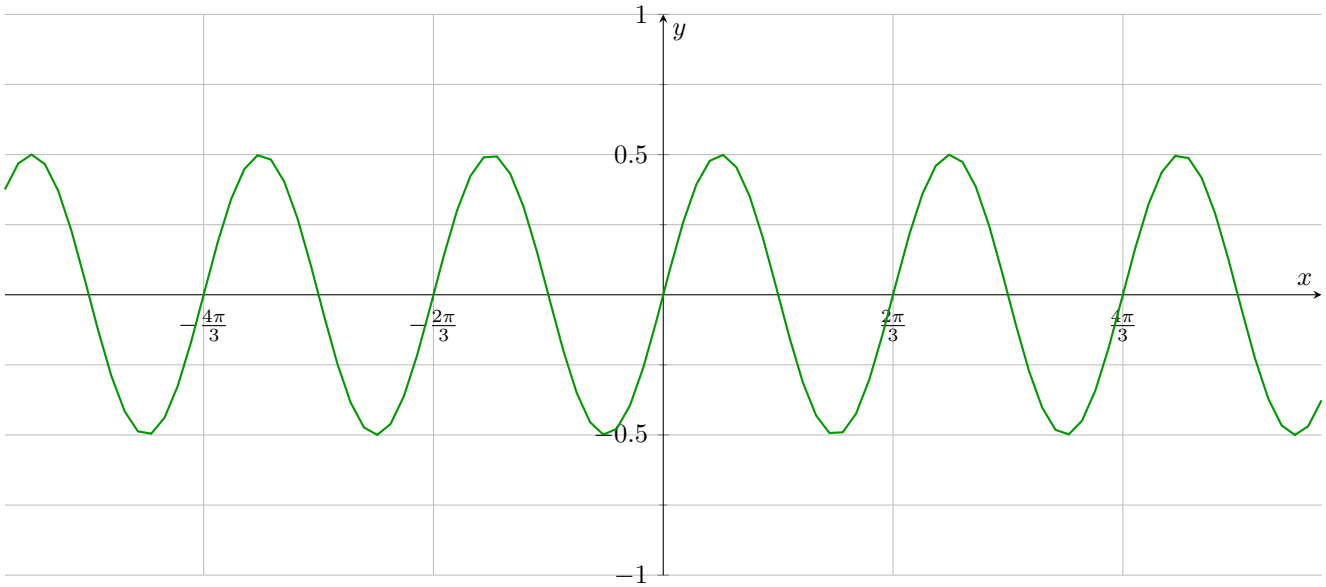
Question 6 - Use SINE



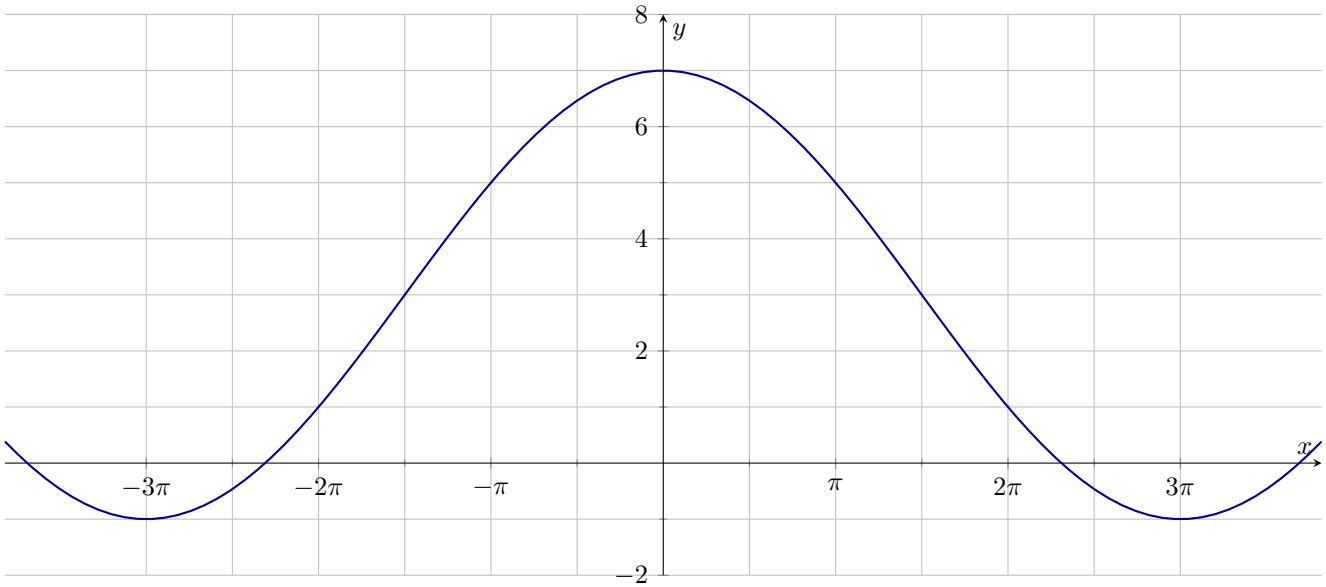
Question 7 - Use COSINE



Question 8 - Use SINE



Question 9 - Use COSINE



3 Graphing Sinusoidal Functions

Graph each of the following functions on your paper. Be sure to show at least one full period.

10. $c(x) = -2\sin(\frac{\pi}{4}x + \pi) + 1$
11. $n(x) = 3\cos(2x - \frac{\pi}{3}) - 2$
12. Name two points at which $n(x)$ (as defined above) has a relative maximum.
13. Starting with $cos(x)$, describe the transformations required to obtain $n(x)$.