MIE237 Math Test

1. Solve the following linear systems.
    a. 2x + 3y = 7
       x - y = 1

b. 8x + 5y = 2
   5x + 2y = 8

2. Solve for the variable. If there are two roots, pick the smallest.
    a. x^2 + 4x = 21

b. x = 6x - 15

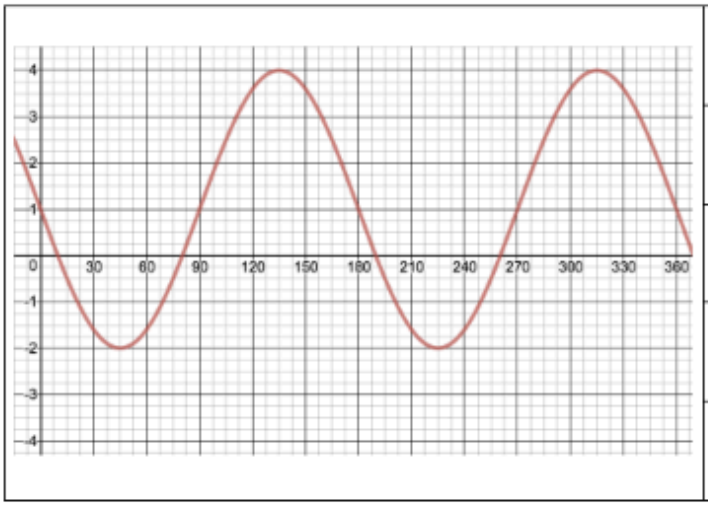
3. Find the vertical and horizontal asymptotes of the following equations.
    a. g(x) = x - 2

b. q(x) = 1/(x - 4)

4. Solve the following exponential equations:
   a. 5^(3 - 2x) = 5^(-x)

   b. 3^(1 - 2x) = 243

5. Solve for the amplitude, period, frequency, and principal axis of the given cosine function.



Amplitude

Period

Frequency

Principal Axis

6. Given the functions f(x) = 2x - 5 and g(x) = 3x + 4 + x^2, evaluate the following:
   a. f(3) - g(2)