MATH 10A   August 25TH

1) Find the domain of:

   ⓐ $\dfrac{x^2 - 4}{x^3 + 8}$ ⓑ $\dfrac{x - 2}{x^2 - x + 41}$

2) Draw the functions $f(x) = |x| \cdot \cos x$, $g(x) = \text{sign}(x) \cdot \sin x$ (Sign denotes the sign function). Can you guess their range?

3) Omar estimates that a bacteria grows like $a \cdot t^b$ (in ml), where t denotes time (seconds). At times 1 and 2 seconds there is 1.6ml and 6.4ml, respectively. Which growth will Omar predict for $t = 5$?

4) Draw $h(x) = (x + 2)^2$. Find the intersection with $y = 25$

5) Find m such that the slope of $L(x) = 8x - m$ at $x = -2$ is equal to $f(-2)$.

6) Find n such that the amplitude and period of $M(x) = 4\cos(nx) + 3$ are equal.

7) Draw $3^x - 9$, π^{x-1}, indicating asymptotes and intercepts.

8) Draw the inverses of the functions from exercise 7.