ALGEBRA 2
PROBLEM SET 21

DUE DATE: DECEMBER 4, 2023

Quiz on Monday!

Question 1. Compute the quotient and remainder of the following division:
$$\frac{6 + 5x^5 + 4x^4 + 3x^3 + 2x^2 + x}{x + 1}$$
(Hint: be careful with the set up.)

Question 2. Suppose $g(x) = 6x^3 + ax^2 - 4ax + b$ has factors $(x + \frac{2}{3})$ and $(x - 2)$ (e.g. $\frac{g(x)}{(3x + 2)}$ and $\frac{g(x)}{(x - 2)}$ leave remainder 0). What is the value of a and b?

Question 3. Given that $f(x) = x^4 + 5x^3 - 11x^2 - 33x - 18$ has factors $(x - 3)$ and $(x + 1)$, fully factor out $f(x)$ and find all zeros.