

# Assignment 17 (11/7)

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## Problem 0(Pre-Calc)

Factorize the following polynomials. You do NOT have to submit the answers to this question. Don't use Wolfram Alpha!

(a)  $x^4 + 3x^3 + 6x^2 - 3x - 7$ . This polynomial has exactly 3 irreducible factors.

(b)  $x^5 - 4x^2 + 5$ . This polynomial has exactly 2 irreducible factors.

## Problem 1

Problems 7.4.(24, 30, 40, 57, 68).

## Problem 2

Problems 7.7.(35, 42, 46, 51, 52).

## Problem 3

Find the following integrals.

(a)

$$\int \frac{e^{2x} - e^{-2x}}{e^{2x} + e^{-2x} + 2} dx$$

(b)

$$\int \left[ \ln(\ln x) + \frac{1}{\ln x} \right] dx$$

(c)

$$\int \frac{e^x(1+x)}{\sin^2(xe^x)} dx$$