

Math 212 GH Quiz 4B

February 19, 2020

Name: _____

Instructions: No calculators. Use your own scrap paper and write your answers in the space provided.

1. Simplify or perform the long division: $\frac{x^3 + 4}{x + 1} =$ _____

2. Write down the partial fraction decomposition of the following. Do NOT solve for the arbitrary constants:

(a) $\frac{2x^2 - 7}{x(x - 1)^2(x^3 + 4)} =$ _____

(b) $\frac{4 - 3x^2}{(x^2 + 7x + 6)(x + 1)} =$ _____

(c) $\frac{7}{x^4 - x} =$ _____

3. Integrate the following:

(a) $\int \frac{x^3}{\sqrt{1 - x^2}} dx =$ _____ (b) $\int \sqrt{\cos 2x + 1} \sin x dx =$ _____

Bonus:

1. In approximating the integral $\int_a^b f(x) dx$ with n subintervals, define what Δx is.

$\Delta x =$ _____

2. Name three numerical integration rules used to approximate definite integrals:
