MATH 134 – Calculus with Fundamentals 2
Makeup Quiz 6 – April 6, 2018

Your Name: _____

Directions

There are 30 total points possible (distributed as indicated in the questions on both sides). You may use a calculator, but not a phone or any other electronic device.

(A) (5) To integrate $\dfrac{x^3+1}{x^2+7x+1}$ by partial fractions, what would be the first step?

(B) (5) To decompose $\dfrac{1}{(x)^2(x+1)(x^2+9)}$ into partial fractions, what would the form of the fractions be (leave coefficients as undetermined; *do not solve for them*).

(B) (10) Determine the values A, B, C making

$$\frac{3x+1}{(x-1)(x-2)(x-5)} = \frac{A}{x-1} + \frac{B}{x-2} + \frac{C}{x-5}$$

(C) (10) You have decomposed a rational function $f(x)$ into partial fractions as

$$f(x) = x + 7 + \frac{1}{x} + \frac{1}{x^2} + \frac{1}{x^2+1}.$$

What is $\int f(x)\, dx$?