# Laplace Transform Practice Homework Problems

(do not submit, this is practice)

**P1** **§6.2**: #1, 3, 5, 7.

**P2** Using Laplace Transforms, solve this **IVP** from Exam #2: **Problem 2**

**P3** *Answer these Multiple Choice Questions*

(i) MA 266 - Spring 2024 - Final Exam #16:

The inverse Laplace Transform of $F(s) = \dfrac{s+1}{s^2+s+\frac{1}{4}}$ is

**A.** $e^{-\frac{t}{2}}$ **B.** $e^{\frac{t}{2}} + \frac{t}{2}e^{\frac{t}{2}}$ **C.** $e^{-\frac{t}{2}} + \frac{t}{2}e^{-\frac{t}{2}}$

**D.** $e^{-\frac{t}{2}} + \frac{3t}{2}e^{-\frac{t}{2}}$ **E.** $e^{-\frac{t}{2}} - \frac{t}{2}e^{-\frac{t}{2}}$

(ii) MA 266 - Spring 2023 - Final Exam #16:

Find the inverse Laplace Transform of $F(s) = \dfrac{4(1+s)}{s^2(s^2+4)}$.

**A.** $f(t) = t - \cos(2t) - \dfrac{1}{2}\sin(2t)$ **B.** $f(t) = 1 + t - \cos(2t) - \sin(2t)$

**C.** $f(t) = t - \cos(2t) - \sin(2t)$ **D.** $f(t) = 1 + t - \cos(2t) - \dfrac{1}{2}\sin(2t)$

**E.** $f(t) = 1 + t + \cos(2t) + \dfrac{1}{2}\sin(2t)$

**P4** Find the Laplace Transform of this piecewise continuous function $g(t)$: