

Math 217 - October 29, 2010

- Laplace Transform

1. $\int_0^\infty M e^{ct} e^{-st} dt =$

2. $\int_0^\infty e^{-st} dt =$

3. $\int_0^\infty e^{-st} e^t dt =$

4. $\int_0^\infty e^{-st} t dt =$

Lecture Problems

5. (a) $\mathcal{L}\{2 - 3t + 5t^2 - 13t^3\} =$

(b) $\mathcal{L}\{\frac{6}{\sqrt{t}} - 7\sqrt{t}\} =$

(c) $\mathcal{L}\{\cosh(at)\} = \mathcal{L}\{\frac{e^t + e^{-t}}{2}\} =$

(d) $\mathcal{L}\{\sinh(at)\} = \mathcal{L}\{\frac{e^t - e^{-t}}{2}\} =$

(e) $\mathcal{L}\{\cos at\} = \mathcal{L}\{\cosh(iat)\} =$

(f) $\mathcal{L}\{\sin at\} = \mathcal{L}\{\frac{1}{i} \sinh(iat)\} =$

(g) $\mathcal{L}\{2 \sin 7t - 5 \sinh 3t\} =$

6. (a) $\mathcal{L}^{-1}\{\frac{4}{s-5}\} =$

(b) $\mathcal{L}^{-1}\{\frac{4}{3s-5}\} =$

(c) $\mathcal{L}^{-1}\{\frac{4}{s^2+5}\} =$