

MATH 246 Groupwork 2.9a

Name: _____

1. Calculate $\mathcal{L}[e^{2t}]$ using the definition of the Laplace Transform.

2. Calculate $\mathcal{L}[3t]$.

3. Calculate $\mathcal{L}[3 + t^2 + e^{-4t} \cos(t)]$.

4. Find y with $\mathcal{L}[y] = \frac{3}{t-7}$.

5. Find y with $\mathcal{L}[y] = \frac{s+1}{s^2+16}$.

6. Use Laplace Transforms to solve the IVP:

$$y' = 0.1y \quad \text{with} \quad y(0) = 2$$