1 $\mathcal{L}[e^{2t} + 3e^{-5t}]$

2 $\mathcal{L}[\sinh 6t + 3e^{-5t} + \cos 5t]$

3 $\mathcal{L}[\cos^2 3t]$

4 $\mathcal{L}[\cos^3 3t]$

5 $\mathcal{L}[\cos 4t \sin 2t]$

6. Evaluate $\mathcal{L}[f(t)]$.

$$f(t) = \begin{cases} e^t, & 0 \le t < 1 \\ 0, & t > 1 \end{cases}$$

7 $$f(t) = \begin{cases} t, & 0 < t < 4 \\ 5, & t > 4 \end{cases}$$

8 $\mathcal{L}[\sin 8t \cos 4t + \cos^3 4t + 5]$.

[Ans.: $\frac{6}{s^2-36} + \frac{3}{s+5} + \frac{s}{s^2+25}$]

[Ans: $\frac{1}{2}\left[\frac{1}{s} + \frac{s}{s^2+36}\right)$]

$\left[\frac{s}{4}\left(\frac{1}{s^2+81} + \frac{3}{s^2+9}\right)\right]$

$\left[\frac{3}{s^2+36} - \frac{1}{s^2+4}\right]$

$\left[\frac{e^{1-s} - 1}{1-s}\right]$

$\left\{\frac{1}{s^2} + e^{-4s}\left(\frac{1}{s} - \frac{1}{s^2}\right)\right\}$.