1. Section 7.2: 2, 4, 8, 12

2. Section 7.3: 2, 4, 6, 8

3. In this problem we find a function $f(t)$ such that

$$\mathcal{L}\{f(t)\} = \frac{1}{s(s-5)}e^{-2s}.$$

a) Use the method of partial fractions to write

$$\frac{1}{s(s-5)} = \frac{A}{s} + \frac{B}{s-5}$$

for certain constants A and B.

b) Find a function $g(t)$ such that

$$\mathcal{L}\{g(t)\} = \frac{1}{s(s-5)}.$$

Hint: Use your answer in part a), and look at our table of Laplace transforms if needed.

c) Now use the "switching" property introduced in class on Wednesday to find a function $f(t)$ such that

$$\mathcal{L}\{f(t)\} = \frac{1}{s(s-5)}e^{-2s}.$$