a.)

$$\mathcal{L}^{-1}\left[\frac{s}{(s+3)(s-2)}\right] = \frac{1}{5}\mathcal{L}^{-1}\left[\frac{3}{s+3} + \frac{2}{s-2}\right] = \frac{3}{5}e^{-3t} + \frac{2}{5}e^{2t}$$

b.)

$$\mathcal{L}^{-1}\left[\frac{1}{s(s+2)}\right] = \frac{1}{2}\mathcal{L}^{-1}\left[\frac{1}{s} - \frac{1}{s+2}\right] = \frac{1}{2} - \frac{1}{2}e^{-2t}$$

c.)

$$\mathcal{L}^{-1}\left[\frac{s^2}{(s^2-1)(s^2+4)}\right] = \frac{1}{5}\mathcal{L}^{-1}\left[\frac{4}{s^2+4} + \frac{1}{s^2-1}\right]$$