$$F_1(s) = \frac{2s+5}{s^2+5s+6}$$

$$F_1(s) = \frac{2s+5}{(s+2)(s+3)}$$

$$= \frac{r_1}{s+2} + \frac{r_2}{s+3}$$

$$r_1 = \lim_{s \to -2} (s+2) \frac{2s+5}{(s+3)(s+2)}$$

$$r_1 = 1$$

$$r_2 = \lim_{s \to -3} (s+3) \frac{2s+5}{(s+3)(s+2)}$$

$$= 1$$

$$F_1(s) = \frac{1}{s+2} + \frac{1}{s+3}$$

$$f_1(t) = e^{-2t} + e^{-3t}$$