$$F_3(s) = \frac{s+3}{(s+1)(s^2+4s+8)}$$

$$= \frac{r_1}{(s+1)} + \frac{r_1(s+2)}{(s+2)^2+2^2}$$ note error

$$+ \frac{r_3 s}{(s+2)^2+2^2}$$

$$r_1 = \left.\frac{(s+3)(s+1)}{(s+1)(s^2+4s+8)}\right|_{s=-1}$$

$$= \frac{2}{s}$$

$$\frac{s+3}{(s+1)(s^2+4s+8)} = \frac{2/s}{(s+1)} + \frac{r_2(s+2)}{s^2+4s+8} + \frac{r_3(s)}{s^2+4s+8}$$