例13：求$L^{-1}[\frac{2s^2+3s+3}{s^4+10s^3+36s^2+54s+27}]$

解：令$F(s)=\frac{2s^2+3s+3}{s^4+10s^3+36s^2+54s+27}=\frac{2s^2+3s+3}{(s+3)^3(s+1)}$

$$=\frac{r_1}{[s-(-3)]^3}+\frac{r_2}{[s-(-3)]^2}+\frac{r_3}{[s-(-3)]}+\frac{c_1}{[s-(-1)]}$$

$$r_1=\frac{2s^2+3s+3}{s+1}\bigg|_{s=-3}=-6 \qquad r_2=\frac{d[\frac{2s^2+3s+3}{s+1}]}{ds}\Bigg|_{s=-3}=\frac{3}{2};$$

$$r_3=\frac{1}{2!}\times\frac{d^2[\frac{2s^2+3s+3}{s+1}]}{ds^2}\Bigg|_{s=-3}=-\frac{1}{4} \qquad c_1=\frac{1}{4}$$

$$r_i=\frac{1}{(i-1)!}\cdot\frac{d^{i-1}[F(s)(s-p)^r]}{ds^{i-1}}\bigg|_{s=p} \quad (i=1\sim r)$$