令 $f(x)=(x-3)(x-5)(x-7)(x-9)+a(x-3)(x-5)(x-9)+b(x-5)(x-7)(x-9)+c(x-7)(x-3)(x-9)+d$

由 $f(3)=9, f(5)=16, f(7)=27$

可求出 $a=\dfrac{d-27}{16}, b=\dfrac{d-9}{48}, c=\dfrac{16-d}{16}$

$f(x)=(x-3)(x-5)(x-7)(x-9)+\dfrac{d-27}{16}(x-3)(x-5)(x-9)+\dfrac{d-9}{48}(x-5)(x-7)(x-9)+\dfrac{16-d}{16}(x-7)(x-3)(x-9)+d$

$f(1)+f(9)=(432-d)+d=432$