

57 (c) $a_1, pa_1, p(a_1+pa_1), p(p^2a_1+pa_1+pa_1+a_1)$
 $p^2a_1+pa_1, p^3a_1+2p^2a_1+pa_1$
 $pa_1(p+1), pa_1(p^2+2p+1) = pa_1(p+1)^2$ 1/5, 1/2
 $a_n = pa_1(p+1)^{n-1}$

$$\frac{a_n}{a_{n-1}} = \frac{pa_1(p+1)^{n-1}}{pa_1(p+1)^{n-2}} = p+1$$

or $pa_1(p+1)^{n-1}$

(d) $\begin{cases} a_1 = 2 \\ pa_1(p+1) = 24 \end{cases} \rightarrow p(p+1) = 12 \rightarrow \boxed{\begin{matrix} p=3, a_2=6 \\ p=-4, a_2=-8 \end{matrix}}$