

53

$$\left. \begin{aligned} 3 &= \frac{a_1}{1+q} \\ 1 &= \frac{a_3}{1+q^3} \end{aligned} \right\} \therefore 3 = \frac{\frac{a_1}{1+q}}{\frac{a_1 q^2}{(1+q)(1+q+q^2)}} = \frac{1+q+q^2}{q^2}$$

$$3q^2 = 1+q+q^2$$

$$2q^2 - q - 1 = 0$$

~~q = 1~~

$$q = -\frac{1}{2} \rightarrow \boxed{a_1 = 4\frac{1}{2}}$$