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$$S = \frac{a_1}{1-q} \quad T = \frac{a_1 q}{1-q^2}$$

$$\begin{cases} S + 2T = 0 \rightarrow S = -2T \\ S + T = 21 - \frac{21}{32} \end{cases}$$

$$-2T^2 = -2T + T - \frac{21}{32}$$

$$2T^2 - T - \frac{21}{32} = 0$$

$$64T^2 - 32T - 21 = 0 \quad \begin{cases} T = \frac{7}{8} \\ T = -\frac{3}{8} \end{cases}$$

$$\frac{a_1}{1-q} = \frac{-29 \cdot 9}{1-9^2} = \frac{-29 \cdot 9}{(1-9)(1+9)}$$

$$1+9 = -29$$

$$9 = -\frac{1}{3}$$

$$\frac{7}{8} = \frac{a_1(-\frac{1}{3})}{1-\frac{1}{9}}$$

$$\rightarrow \frac{7}{8} \cdot \frac{8}{9} = -\frac{1}{3} a_1 \Rightarrow a_1 = -\frac{7}{3}$$

$$-\frac{3}{8} = \frac{a_1(-\frac{1}{3})}{1-\frac{1}{9}}$$

$$\rightarrow -\frac{3}{8} \cdot \frac{8}{9} = -\frac{1}{3} a_1 \Rightarrow a_1 = 1$$