

Name: _____

Given: $a_n = a_m + (n - m)d$.

An arithmetic sequence has $a_{15} = 72$ and $a_{21} = 108$. Find d and a_1 .

$$a_n = a_m + (n - m)d$$

$$\begin{array}{l} n = 21 \\ m = 15 \end{array} ; \quad a_{21} = a_{15} + 6d$$

$$108 = 72 + 6d$$

$$36 = 6d$$

$$\boxed{6 = d}$$

$$a_n = a_m + (n - m)d$$

$$\begin{array}{l} n = 21 \\ m = 1 \end{array} ; \quad a_{21} = a_1 + 20d$$

$$108 = a_1 + 120$$

$$\boxed{-12 = a_1}$$