

$$a_n + a_{n+r} = a_r + a_{14}$$

(10)

$$a_n = r a_{\frac{n}{r}}$$

$$n + n + r = r + 14 \rightarrow rn + r = r \rightarrow rn = 14 \rightarrow n = 1$$

$$a_n = r a_r$$

$$a_1 + rd = r(a_1 + rd) \rightarrow a_1 + rd = ra_1 + r^2d$$

$$ra_1 - a_1 + rd - r^2d = 0 \rightarrow ra_1 + rd = 0$$

$$\rightarrow a_1 + d = 0 \rightarrow a_1 = -d$$

$$a_1 + (n-1)d = 0 \rightarrow a_1 + nd - d = 0$$

$$-d + nd - d = 0 \rightarrow -rd + nd = 0 \rightarrow \boxed{n = r}$$