

⑧ $a_3 = 12$
 $\Rightarrow a + 2d = 12 \dots \textcircled{i}$

$l = a_{50} = 106$
 $a + 49d = 106 \dots \textcircled{ii}$

$\textcircled{i} - \textcircled{i}$
 $a + 49d = 106$
 $a + 2d = 12$
 \hline
 $47d = 94$

$\Rightarrow d = \frac{94}{47} \dots$

$\Rightarrow d = 2$

Sub. in \textcircled{i}

$a + 2 \times 2 = 12$

$\Rightarrow a = 12 - 4$
 $= 8$

$a_{29} = a + 28d$
 $= 8 + 28 \times 2$
 $= 8 + 56$
 $= 64$

⑨ $a_3 = 4$
 $a + 2d = 4 \dots \textcircled{i}$

$a_9 = -8$

$a + 8d = -8 \dots \textcircled{ii}$

$\textcircled{ii} - \textcircled{i}$
 $a + 8d = -8$
 $a + 2d = 4$
 \hline

$6d = -12$

$\Rightarrow d = \frac{-12}{6}$

$\Rightarrow d = -2$

Sub \textcircled{i}

$a + 2(-2) = 4$

$\Rightarrow a = 4 + 4$

$\Rightarrow a = 8$

$a_n = 0$

$a + (n-1)d = 0$

$8 + (n-1)(-2) = 0$

$\Rightarrow -2(n-1) = -8$

$\Rightarrow n-1 = \frac{-8}{-2}$

$\Rightarrow n = 4 + 1$

$\Rightarrow n = 5$

\therefore 5th term is 0

⑩ $a_{17} - a_{10} = 7$

$a + 16d - a - 9d = 7$

$\Rightarrow 7d = 7$

$\Rightarrow d = 1$