

FORM 4 ADDITIONAL MATHEMATICS

5.1 ARITHMETIC PROGRESSIONS (PART 2)

NAME: _____ CLASS: _____

1) 2, 6, 10, 14, (sum of the first 10 terms)

Solution: $a =$
 $d =$
 $S_n = \frac{n}{2} [2a + (n-1)d]$
 $S_{10} = \frac{10}{2} [2() + ()]$
 $=$

2) -6, 1, 8, 15, ..., 127

Solution: $a =$
 $d =$
 $T_n =$
 $a + (n-1)d =$
 $+ (n-1) =$
 $n =$
 $n =$
 $S_n = \frac{n}{2} [a + l]$
 $\therefore S_{20} = \frac{20}{2} (+)$
 $= ()$
 $=$

3) The first term and the last term of an arithmetic progression are 3 and 21 respectively, and the sum of the series is 240. Find the number of terms.

Answer: $a =$, $l =$, $S_n =$
 $S_n = \frac{n}{2} (a + l)$
 $240 = \frac{n}{2} (+)$
 $= n =$

4) Given an arithmetic progression -6, 1, 8, 15, ..., find the sum from the 9th term to the 20th term.

Answer: $a =$
 $d =$
 $S_n = \frac{n}{2} [2a + (n-1)d]$
 $S_{20} = \frac{20}{2} [2() + ()]$
 $=$
 $\therefore \text{Sum from } T_9 \text{ to } T_{20} = S_{20} - S_8$
 $= -$
 $=$

5) The sixth terms of an arithmetic progression is 20 and the sum of the first six terms is 210. Find the first term and the common difference.

Answer: $T_6 =$
 $a + 5d = 20 \quad \text{--- (1)}$
 $S_6 =$
 $\frac{6}{2} (a + 5d) = 210$
 $2a + 5d = \quad \text{--- (2)}$
 $\text{Solve (1) and (2).}$
 $\begin{array}{r} a - 5d = 20 \\ 2a - 5d = 70 \\ \hline a = \end{array}$
 $\text{Substitute } a = 50 \text{ into } 50 + 5d = 20$
 $5d =$
 $d =$