

**FORM 4 ADDITIONAL MATHEMATICS**  
**5.1 ARITHMETIC PROGRESSIONS (PART 2)**

**NAME:** \_\_\_\_\_

**CLASS:** \_\_\_\_\_

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

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

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

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

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

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

Answer:  $a =$   
 $d =$   
 $S_n = \frac{n}{2}[2a + (n-1)d]$   
 $S_{20} = \frac{20}{2}[2(\quad) + (\quad)]$   
 $=$   
 $S_8 = \frac{8}{2}[2(\quad) + (\quad)]$   
 $=$   
 $\therefore \text{Sum from } T_9 \text{ to } T_{20} = S_{20} - S_8$   
 $=$   
 $=$

- 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:  $T_6 =$ ,  $S_6 =$   
 $a + 5d = 20 \quad \text{--- (1)}$   
 $\frac{6}{2}(a + d) = 210$   
 $2a + 5d = \quad \text{--- (2)}$   
 Solve (1) and (2).  
 $a + 5d = 20$   
 $2a + 5d = 70$   
 $\underline{\hspace{1cm}}$   
 $a =$   
 $a =$   
 Substitute  $a = 50$  into  $50 + 5d = 20$   
 $5d =$   
 $d =$