Grade 10 Mathematics

NEW TEST

MEMORANDUM

QUESTION 1

1.1	$T_1 = 2(1) - 5 = -3$ ✓ $T_2 = 2(2) - 5 = -1$ ✓ $T_3 = 2(3) - 5 = 1$ ✓	*Ans* *Ans* *Ans*	(3)
1.2	$T_1 = 2$ ✓ $T_2 = 9 - 2(2)$ $= 5$ ✓ $T_3 = 9 - 2(3)$ $= -1$ ✓	*Ans* *Ans* *Ans*	(3)
			[6]

QUESTION 2

2.1	$p = 12$ ✓ $q = 16$ ✓	*Ans* *Ans*	(2)
2.2	$T_n = a + (n-1)d$ ✓ $T_n = 4 + (n-1)(4)$ ✓ $= 4 + 4n - 4$ $T_n = 4n$ ✓	 *Subs a and d* *Ans*	(3)
2.3	$120 = 4n$ ✓ $n = 30$ ✓	*Subs* *Ans*	(2)
			[7]

QUESTION 3

3.1	$x = 3$ ✓ $y = -13$ ✓	*Ans* *Ans*	(2)
3.2	$T_n = a + (n-1)d$ ✓ $= 3 + (n-1)(-4)$ ✓ $= 3 - 4n + 4$ $T_n = -4n + 7$ ✓	 *Subs a and d* *Ans*	(3)
3.3	$T_{40} = -4(40) + 7$ ✓ $= -153$ ✓	*Subs* *Ans*	(2)

3.4	$-101 = -4n + 7$ ✓ $4n = 108$ $n = 27$ ✓	*Subs* *Ans*	(2)
			[9]

QUESTION 4

4.1	29 sticks ✓	*Ans*	(1)
4.2	$T_n = a + (n-1)d$ $= 8 + (n-1)(7)$ ✓✓ $= 8 + 7n - 7$ $T_n = 7n + 1$ ✓	 *Subs a and d* *Ans*	(3)
4.3	$T_{100} = 7(100) + 1$ ✓ $= 701$ ✓	*Subs* *Ans*	(2)
4.4	$351 = 7n + 1$ $7n = 350$ ✓ $n = 50$ ✓	 *Subs* *Ans*	(2)
			[8]

QUESTION 5

5.1	$T_1 + T_2 + T_3 + T_4 + T_5 + T_6 = 75$ ✓ $T_1 + T_2 + T_3 + T_4 + T_5 + T_6 + T_7 = 98$ $75 + T_7 = 98$ ✓ $T_7 = 98 - 75$ $= 23$ ✓	*Set up equations* *Subs equation* *Ans* *(Or any other method)*	(3)
5.2	10 letter repeating $279 \div 10 = 27\ rem\ 9$ ✓ $\therefore repeats\ 27\ times\ and\ 9\ remaining$ A L M O S T D O N 1 2 3 4 5 6 7 8 9 $\therefore N$ ✓	 *Calculate remaining* *Ans (Ans only full marks)*	(2)
			[5]

Total: 35 Marks