Name:_____

10.1&10.2 Homework

$$a_n = a_1 + (n-1)d$$

$$S_n = \frac{n}{2}(a_1 + a_n)$$

1) True or False; The following sequence is arithmetic: -10,-3,4,11,18,25,32.

(if it is true, identify the *d* value)

2) True or False; The following sequence is arithmetic: -14,-12,-10,-8,-6,…

(if it is true, identify the *d* value)

3) True or False; The following series is arithmetic infinite: -10 +(-15)+(-20)+(-25) +(-30).

(if it is true, identify the *d* value)

4) True or False; The following sequence is arithmetic: $\frac{11}{6}, \frac{19}{6}, \frac{9}{2}, \frac{35}{6}, \frac{43}{6}, \ldots$

(if it is true, identify the *d* value)

5) Write an explicit formula for the sequence. Then find a_{13}. 12,22,32,42..

6) Find the first 19th partial sum of the series -8+(-13)+(-18)…

7) One term of an arithmetic sequence is $a_{18} = 22$. The common difference is 6. Find a_1.

8) One term of an arithmetic sequence is $a_{14} = -11$ and *d* is 4. Write an explicit formula.

9) Determine a rule for the nth term of the sequence. Then find a_{13}. 72, 60, 48, 36, 24, ..

10) One term of an arithmetic sequence is $a_{19} = 34$. The common difference is d = $\frac{7}{2}$ Write an explicit formula.

11) Write an explicit formula. Then find a_{12}. $0, \frac{2}{3}, \frac{4}{3}, 2, \ldots$

12) Write an explicit formula. Then find a_{13}. $0, \frac{3}{2}, 3, \frac{9}{2}, \ldots$

13) Two terms of an arithmetic sequence are $a_8 = 74$ and $a_{21} = 191$. Write an explicit formula.

a) a_n =-2 +9n b) a_n = -2 +10n c) a_n =10n +2 d) a_n =9n + 2

$$a_n = a_1 + (n-1)d$$

$$S_n = \frac{n}{2}(a_1 + a_n)$$

14) Two terms of an arithmetic sequence are $a_7 = 42$ and $a_{23} = 170$. Write an explicit formula.

a) $a_n = -14 + 8n$ b) $a_n = 14 + 8n$ c) $a_n = 14 + 10n$ d) $a_n = -14 + 10n$

15) Two terms of an arithmetic sequence are $a_9 = 40$ and $a_{23} = 96$. Write an explicit formula.

a) a_n =4 +6n b) a_n = 4n +4 c) a_n = -4 +4n d) a_n =-4 + 6n

16) Find the sum of the arithmetic series $\sum_{i=4}^{21} (9 + 8i)$

a) -1960 b) -1962 c) 1960 d) 1962

17) Given the first 46th partial sum of an arithmetic series is -1265 and the d value is -1, find a_1 and a_{46}.

18) Find S_{23} of the series -13+-5 +3 +…

19) Considering if number 18 was a sequence, does it converge or diverge and why?