

Integrated Math 3**8.2 (Day 2) Worksheet******Don't Forget Bookwork Too!!****

Name: _____

Date: _____ Per: _____

KEY

Evaluate each series to the given term.**1. 3 + 10 + 17 + 24 + ...; 10th term**

$$a_n = 3 + (n-1)7$$

$$a_{10} = 3 + 9(7)$$

$$S_{10} = 10 \left(\frac{3+66}{2} \right) \\ = 10(34.5)$$

1. $a_{10} = 66$

$$S_n = 345$$

2. -5 - 25 - 45 ...; 9th term

$$-25 + 5 = -20 = d$$

$$a_n = -5 + (n-1)(-20)$$

$$a_9 = -5 + (8)(-20)$$

$$S_9 = 9 \left(\frac{-5-165}{2} \right) \\ = 9(-85)$$

2. $a_9 = -165$

$$S_n = -765$$

3. 2 + 3 + 4 + 5 + ...; 100th term

$$a_n = n+1$$

$$S_{100} = 100 \left(\frac{2+101}{2} \right)$$

3. $a_{100} = 101$

$$S_n = 5150$$

4. 0.17 + 0.13 + 0.09 + 0.05 + ...; 12th term

$$0.13 - 0.17 = -0.04$$

$$a_n = 0.17 + (n-1)(-0.04)$$

$$a_{12} = 0.17 + (11)(-0.04)$$

$$S_{12} = 12 \left(\frac{0.17-0.27}{2} \right)$$

4. $a_{12} = -0.27$

$$S_n = -0.6$$

5. 1500 + 1499 + 1498 + 1497 + ...; 1000th term

$$a_1 = 1500$$

$$a_n = 1500 + (n-1)d$$

$$= 1500 + (n-1)(-1)$$

$$a_{1000} = 1500 + (999)(-1)$$

$$S_{1000} = 1000 \left(\frac{1500+501}{2} \right)$$

5. $a_{1000} = 501$

$$S_n = 1,000,500$$