**Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

 **Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Block \_\_\_\_\_\_\_\_**

|  |  |
| --- | --- |
| **Sigma Notation:**  | **Example:** Expanded FormSum |

**Write in expanded form and find the sum.**

**1.**  **2.** 

**1. Expanded Form: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 2. Expanded Form: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Sum: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** **Sum: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**3.**  **4.** 

**3. Expanded Form: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 4. Expanded Form: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Sum: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** **Sum: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Find the sum of each series described using the summation formula. (i.e., DO NOT EXPAND.)**

**5.**  **6.** 

**5. Sum: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **6. Sum: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Use sigma notation to express each series.**

**7.** 2 + 6 + 10 + 14 + 18 **8.** 54 + 18 + 6 + 2 +  + 

**Write each series in expanded form, and find its sum.**

**9.**  **10.** 

**9. Expanded Form: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 10. Expanded Form: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Sum: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** **Sum: \_\_\_\_\_\_\_\_\_\_\_\_\_­\_\_\_\_\_\_\_**

**Find Sn for each series described.**

**11.**  **12.** 

**13.**  **14.** 

**Use sigma notation to express each series.**

**15.** 6 + 12 + 24 + 48 **16.** 16 - 24 + 36 - 54 + 81 - 121.5 + 182.25

**17.** 3 – 9 + 27 – 81 + 243 **18.** 4 + 1 – 2 – 5 - 8

**19.** A pile driver drives a post 9 feet into the ground on its first hit. Each additional hit drives the post 

the distance of the prior hit. Find the total distance the post has been driven after 4 hits.

**20.** Parth drops a ball from a height of 128 meters. Each time it hits the ground, it bounces 50% of its

 previous height. How high does the ball bounce after the ninth time it hits the ground?

 (HINT: n = the number of times the ball **hits the ground**.)

**21.** Alma has just received job offers from ACME, Inc. and Widget.com. Both companies have offered

her a salary of $35,000 for the first year. ACME, Inc. tells Alma they will increase her salary by 5% each year. Widget.com says they will increase her salary by $2,000 each year.

***Use the nth term formulas to calculate her salary in year 9 with each company.***

 **ACME: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Widget: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**