

Part 1**A) Set 1****Inputs:** $a = 1, d = 3, n = 10$ **Outputs:** $1 + 4 + 7 + 10 + 13 + 16 + 19 + 22 + 25 + 28$ **Set 2****Inputs:** $a = 50, d = 12, n = 5$ **Outputs:** $50 + 62 + 74 + 86 + 98$ **Set 3****Inputs:** $a = 301, d = 18, n = 12$ **Outputs:** $301 + 319 + 337 + 355 + 373 + 391 + 409 + 427 + 445$
 $+ 463 + 481 + 499$ **B) Let a be the first number, l the last number, and d the common difference.****Set 1****Inputs:** $a = 2, l = 10, d = 2$ **Outputs:** $2 + 4 + 6 + 8 + 10$ **Set 2****Inputs:** $a = 80, l = 105, d = 5$ **Outputs:** $80 + 85 + 90 + 95 + 100 + 105$ **Set 3****Inputs:** $a = 76, l = 160, d = 7$ **Outputs:** $76 + 83 + 90 + 97 + 104 + 111 + 118 + 125 + 132 +$
 $139 + 146 + 153 + 160$

Part 2

A) Set 1

Inputs: $a = 10, r = 2, n = 5$

Outputs: $10 + 20 + 40 + 80 + 160$

Set 2

Inputs: $a = 5, r = 3, n = 10$

Outputs: $5 + 15 + 45 + 135 + 405 + 1215 + 3645 + 10935 + 32805 + 98415$

Set 3

Inputs: $a = 7, r = 3, n = 2$

Outputs: $7 + 21$

B) Let r = common ratio, x = the last number, and a = the first number.

Set 1

Inputs: $r = 2, x = 160, a = 10$

Outputs: $10 + 20 + 40 + 80 + 160$

Set 2

Inputs: $r = 4, x = 80, a = 5$

Outputs: $5 + 20 + 80$

Set 3

Inputs: $r = 6, x = 15552, a = 12$

Outputs: $12 + 72 + 432 + 2592 + 15552$

Part 3

Let a = first number, r = the common ratio, and n = the number of terms.

Set 1

Inputs: $a = 0.5$, $r = 0.5$, $n = 10$

Outputs: The infinite sequence has sum of 1.0

Set 2

Inputs: $a = 4$, $r = 10$, $n = 4$

Outputs: The infinite sequence does not have a sum.

Set 3

Inputs: $a = 6$, $r = 2$, $n = 3$

Outputs: The infinite sequence does not have a sum.