

Introduction to Series

(# 53)

Rewrite each series as a sum.

$$1) \sum_{m=1}^5 (4m^2 + 4)$$

$$2) \sum_{k=1}^5 (30 - k^2)$$

$$3) \sum_{n=1}^5 n$$

$$4) \sum_{m=1}^6 (50 - m)$$

$$5) \sum_{a=1}^6 (3a^2 - 2)$$

$$6) \sum_{m=1}^5 (100 - m)$$

$$7) \sum_{m=0}^5 m(m+2)$$

$$8) \sum_{k=0}^4 (100 - k)$$

Evaluate each series.

$$9) \sum_{n=1}^7 (40 - n^2)$$

$$10) \sum_{k=1}^5 3k$$

$$11) \sum_{a=0}^5 a$$

$$12) \sum_{k=0}^4 2k$$

$$13) \sum_{k=1}^6 k^2$$

$$14) \sum_{m=1}^5 3m$$

Rewrite each series using sigma notation.

15) $1 + 2 + 3 + 4$

16) $3 + 9 + 27 + 81 + 243$

17) $3 + 9 + 27 + 81$

18) $1 + 4 + 9 + 16 + 25$

19) $4 + 8 + 12 + 16$

20) $1 + \frac{1}{2} + \frac{1}{3} + \frac{1}{4} + \frac{1}{5} + \frac{1}{6}$

Critical thinking questions:

21) Are these equal? Why or why not?

$$\sum_{x=1}^{50} \frac{1}{x} \quad \text{and} \quad \sum_{x=21}^{70} \frac{1}{x-20}$$

22) Rewrite the following so that it starts at $x = 0$

$$\sum_{x=7}^{10} x(x+1)$$