

## More Series (Assignment 56)

Combine each expression into one sum using sigma notation. Do not calculate.

$$1. \quad 3 \sum_{m=1}^7 m - \sum_{m=1}^7 5$$

$$2. \quad \sum_{m=1}^{18} m^3 + 2 \sum_{m=1}^{18} \sqrt{m}$$

$$3. \quad -2 \sum_{m=0}^{100} 3m + 4 \sum_{m=0}^{100} m$$

$$4. \quad 3 \sum_{m=6}^{12} \frac{1}{m} + 2 \sum_{m=6}^{12} m$$

$$5. \quad \sum_{m=1}^{25} m^2 - 6 \sum_{m=1}^7 (1 - m^2)$$

$$6. \quad 5 \sum_{m=10}^{58} m^6 + \sum_{m=10}^{58} \sin(m)$$

First calculate using our formula for arithmetic series:  $\sum a_m = \frac{n(a_1 + a_m)}{2}$ . Then calculate a second way by separating each sum into a combination of  $\sum 1$  and  $\sum m$ .

$$7. \quad \sum_{m=1}^{15} (2m - 5)$$

$$8. \quad \sum_{m=1}^{15} (1 - 3m)$$

$$9. \quad \sum_{m=1}^{15} (m - 7)$$

$$10. \quad \sum_{m=1}^{15} (2m + 3)$$