



## Quiz 8.1 – Sigma Notation and Summations

1. (1 pt) [alfredLibrary/AUCI/chapter8/lesson1/quiz/sum1pet.pg](#)

Use the "summation formulas" to find the numerical value of each sum.

(a)  $\sum_{k=1}^{110} k =$  \_\_\_\_\_

(b)  $\sum_{k=1}^{130} 25 =$  \_\_\_\_\_

(c)  $\sum_{k=1}^{120} (7k + 3) =$  \_\_\_\_\_

(d)  $\sum_{k=1}^{65} k^2 =$  \_\_\_\_\_

2. (1 pt) [alfredLibrary/AUCI/chapter8/lesson1/quiz/summationformula1petL.pg](#)

"Peel off" as many terms as necessary so that the appropriate summation formula can be used.

$$\begin{aligned} \sum_{k=-2}^{43} k^3 &= \_ + \_ + \_ + \_ \sum_{k=1} \_ \\ &= \_ + \left(\_ \right)^2 \left(\_ \right)^2 \_ \\ &= \_ \end{aligned}$$

3. (1 pt) [alfredLibrary/AUCI/chapter8/lesson1/quiz/sum7pet.pg](#)

Use the "summation formulas" to express the following sum in closed form. Your answer should be in terms of  $n$ .

$$\sum_{k=1}^n (4 + 4k)^2 = \_$$

(HINT: You must first expand  $(4 + 4k)^2$ ).