Fall 2017 Algorithms and Analysis Tools Exam, Part A

3) (10 pts) ANL (Summations and Recurrence Relations)

Let a, b, c, and d, be positive integer constants with a < b. Without using the arithmetic sum formula, prove that

$$\sum_{i=a}^{b} (ci+d) = \frac{(c(a+b)+2d)(b-a+1)}{2}$$