

Problem 1. *Get rid of the Σ by writing the sum out, and write a single number if possible.*

(a) $\sum_{i=3}^6 \cos(\pi i)$

(b) $\sum_{s=-2}^2 s^3$

(c) $\sum_{j=0}^3 2$

(d) $\sum_{i=1}^n i^1$

Problem 2. *Combine into a Σ -notation.*

(a) $\cos(3) + \sin(3) + \cos(4) + \sin(4) + \cos(5) + \sin(5)$

(b) $\sqrt{4+1} + \sqrt{1+1} + \sqrt{1} + \sqrt{1+1} + \sqrt{4+1}$

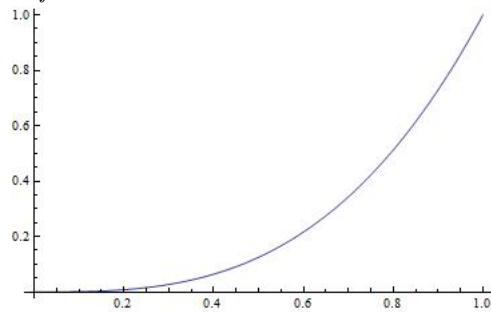
Problem 3. Simplify the following:

(a) $\sum_{i=1}^3 i^2 + \sum_{j=4}^{10} j^2$

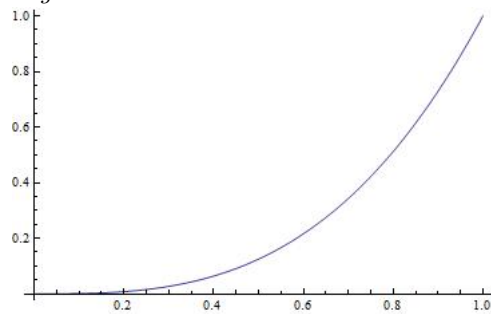
(b) $\sum_{i=5}^{10} i^3 - \sum_{i=6}^{11} i^3$

Problem 4. Use left and right endpoint sums to estimate the area under x^3 :

(a) Left sums:



(b) Right sums:



Problem 5. Find the area of a circle.