

# $\Sigma$ Practice

1. Find

$$\sum_{i=1}^5 \frac{1}{i+1}$$

$$\sum_{i=3}^7 (-1)^i \cdot 2$$

$$\sum_{k=-2}^3 a(j+1)^2$$

2. Write the following in sigma notation.

$$\sqrt{3} + 2 + \sqrt{5} + \sqrt{6} + \sqrt{7}$$

$$-\frac{1}{3} + \frac{3}{7} - \frac{1}{2} + \frac{5}{9} - \frac{3}{5} + \frac{7}{11}$$

*Careful* of notation.

Don't forget PEMDFAS, and sigma behaves very much like a function!!! So that

$$\sum_{i=0}^3 i^2 + 5 = \left( \sum_{i=0}^3 i^2 \right) + 5 = (0^2 + 1^2 + 2^2 + 3^2) + 5 \neq (0^2 + 5) + (1^2 + 5) + (2^2 + 5) + (3^2 + 5)$$

3. Assume that the parabola shown has the rule  $Ax^2 + Bx + C = y$ .

(a) Identify the area described by

$$\int_{-h}^h Ax^2 + Bx + C dx$$

(b) Identify the area described by

$$2 \int_{-h}^0 Ax^2 + C dx + \int_{-h}^h Bx dx$$

(c) Evaluate  $2 \int_{-h}^0 Ax^2 + C dx + \int_{-h}^h Bx dx$

