Name:_____

Area Under a Curve and Integration

$$\int_a^b f(x)dx = \lim_{n\to\infty}\sum_{i=1}^{n} f(x_i)\Delta x \qquad \Delta x = \frac{b-a}{n} \qquad x_i = a + i\Delta x$$

$$\sum_{i=1}^{n} c = cn \qquad \sum_{i=1}^{n} i = \frac{n(n+1)}{2} \qquad \sum_{i=1}^{n} i^2 = \frac{n(n+1)(2n+1)}{6} \qquad \sum_{i=1}^{n} i^3 = \frac{n^2(n+1)^2}{4}$$

1) Evaluate $\int_{-2}^{1} 2x\,dx$

2) Evaluate $\int_{1}^{2} (x^2+1)\,dx$