Name _____

Simpson's Rule for Polynomial of Degree 2 or Less

Date _____ Period _____

Simpson's Rule for Polynomials of Degree 2 or Less

Given $p(x) = Ax^2 + Bx + C$, then

$$\int_a^b p(x)\,dx = \left(\frac{b-a}{6}\right)\left[p(a) + 4p\left(\frac{a+b}{2}\right) + p(b)\right]$$

$$\int_a^b p(x)\,dx = \left(\frac{b-a}{6}\right)\left[p(a) + 4p\left(\frac{a+b}{2}\right) + p(b)\right]$$

Evaluate the following definite integrals

$$\int_{-1}^{3} x + 5\,dx$$

$$\int_a^b p(x)\,dx = \left(\frac{b-a}{6}\right)\left[p(a) + 4p\left(\frac{a+b}{2}\right) + p(b)\right]$$

Evaluate the following definite integrals

$$\int_0^4 x^2 - 3x + 2\,dx$$

$$\int_a^b p(x)\,dx = \left(\frac{b-a}{6}\right)\left[p(a) + 4p\left(\frac{a+b}{2}\right) + p(b)\right]$$

Evaluate the following definite integrals

$$\int_2^4 3x^2 + 2x + 1\,dx$$

$$\int_a^b p(x)\,dx = \left(\frac{b-a}{6}\right)\left[p(a) + 4p\left(\frac{a+b}{2}\right) + p(b)\right]$$

Evaluate the following definite integrals

$$\int_{-2}^{2} 4x^2 - 1\,dx$$

Simpson's Rule for Polynomials of Degree 2 or Less

Given $p(x) = Ax^2 + Bx + C$, then

$$\int_a^b p(x)\,dx = \left(\frac{b-a}{6}\right)\left[p(a) + 4p\left(\frac{a+b}{2}\right) + p(b)\right]$$