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$$
\begin{aligned}
& \int_{a}^{b} f(x) d x \approx S_{n}(f)=\quad n=\text { even } \\
& \begin{array}{l}
=\frac{b-a}{3 n}\left[f\left(x_{0}\right)+4 f\left(x_{1}\right)+2 f\left(x_{2}\right)+4 f\left(x_{3}\right)+2 f\left(x_{4}\right)+\ldots+4 f\left(x_{n_{-1}}\right)+f\left(x_{n}\right)\right] \\
\text { ex, } \int_{0}^{1} 3 x^{2} d x \quad n=4 \\
0 \frac{1}{4} \frac{1}{3} \frac{1}{4}+
\end{array} \\
& S_{4}(f)=\frac{1-0}{3(4)}\left[f(0)+4 f\left(\frac{1}{4}\right)+2 f\left(\frac{1}{2}\right)+4 f\left(\frac{3}{4}\right)+f(1)\right] \\
& =\frac{1}{12}\left[0+\frac{12}{16}+\frac{6}{4}+\frac{108}{16}+3\right] \\
& =1 \\
& \text { (ex.7) } \int_{0}^{2} \sqrt{x^{2}+1} \\
& n=4 \\
& S_{4}(f)=\frac{2-0}{3(4)}\left[f(0)+4 f\left(\frac{1}{2}\right)+2 f(1)+4 f\left(\frac{3}{2}\right)+f(2)\right] \\
& =\frac{1}{6}\left[1+4 \sqrt{\frac{5}{4}}+2 \sqrt{2}+4 \sqrt{\frac{\sqrt{3}}{4}}+\sqrt{5}\right] \\
& \approx 2.958
\end{aligned}
$$



$$
\begin{aligned}
S_{4}(f) & =\frac{1-0}{3(4)}[f(0)+4 f(.25)+2 f(.5)+4 f(.75)+f(1)] \\
& =\frac{1}{12}[1+4(.8)+2(1.3)+4(1.1)+1.6] \\
& \approx 1.066667
\end{aligned}
$$

$$
\begin{aligned}
& p .413-414 \\
& 1-7,9-10,12-16,19,21-22, \\
& 29-31,33,35
\end{aligned}
$$

