## Alternating Estimation Theorem

1. $f(x)=x^{2 / 3}$ centered at $\mathrm{x}=1$
a. Given the function, find the fourth order polynomial
c. Use the alternate estimation theorem to determine the error bound $|f(x)-P(x)| \leq R$ at $\quad \mathrm{x}=1.2$
2. $\quad f(x)=x^{-2}$ centered at $\mathrm{x}=1$
a. Given the function, find the fourth order polynomial
c. Use the alternate estimation theorem to determine the error bound $|f(x)-P(x)| \leq R$ at $\quad \mathrm{x}=1.1$
3. $f(x)=\frac{1}{1+x}$ centered at $\mathrm{x}=0$
a. Given the function, find the fourth order polynomial
c. Use the alternate estimation theorem to determine the error bound $|f(x)-P(x)| \leq R$ at $\quad \mathrm{x}=-.1$
4. $f(x)=\sin x$ centered at $\mathrm{x}=0$
a. Given the function, find the fourth order polynomial
c. Use the alternate estimation theorem to determine the error bound $|f(x)-P(x)| \leq R$ at $\quad \mathrm{x}=-.1$
5. $\quad f(x)=\cos x$ centered at $\mathrm{x}=0$
a. Given the function, find the fourth order polynomial
c. Use the alternate estimation theorem to determine the error bound $|f(x)-P(x)| \leq R$ at $\quad \mathrm{x}=.1$
6. $f(x)=\ln (1+x)$ centered at $\mathrm{x}=0$
a. Given the function, find the fourth order polynomial
c. Use the alternate estimation theorem to determine the error bound $|f(x)-P(x)| \leq R$ at $\quad \mathrm{x}=.1$
