

**Problem 1.** Let  $f(x) = 1/\sqrt{x}$ .

- (a) Find the Taylor polynomial of degree 3 centered at  $c = 4$  for  $f(x)$ .
- (b) Use the error bound to give an upper bound on the size of the error term  $|f(4.3) - T_3(4.3)|$ .

**Problem 2.** Does  $\sum_{n=1}^{\infty} \frac{n!}{(2n)!}$  converge or diverge? Justify your answer.

**Problem 3.** On what interval does the power series  $\sum_{n=1}^{\infty} n(x+2)^n$  converge?