MA 126-6A Spring 2003 Test 4
Name _____

1. Consider the power series

$$\sum_{n=1}^{\infty} \frac{(-3)^n}{\sqrt{n}}(x+4)^n.$$

(a) Determine the radius of convergence of this series.
(b) Determine the interval of convergence of this series.

2. Find a power series expansion of

$$f(x) = \frac{1}{7-4x}$$

about $x = -1$. Determine the radius of convergence of this power series.

3. Let

$$f(x) = x\cos(x).$$

(a) Write the fourth Taylor polynomial $T_4(x)$ of $f(x)$ about 0.

(b) Use Taylor's inequality to give a bound on the error incurred in approximating $f(x)$ by $T_4(x)$ for $-1/2 \leq x \leq 1/2$.