

# Quiz 11

Name: \_\_\_\_\_

1. Find the fourth order Taylor polynomial to the function  $f(x) = \sqrt{x}$  at the point  $x = 4$ .

2. Find the sums of the following finite geometric series:

(a)  $2 - 6 + 18 - 54 + 162 - 484 =$

(b)  $p + pq + pq^2 + pq^3 + \cdots + pq^{51} =$

(c)  $x + \frac{x}{1-x} + \frac{x}{(1-x)^2} + \frac{x}{(1-x)^3} + \cdots + \frac{x}{(1-x)^n} =$

3. Find the sums of the following infinite geometric series and if the series involves a variable say for what values of the variable the series converges.

(a)  $5 - \frac{5}{7} + \frac{5}{7^2} - \frac{5}{7^3} + \frac{5}{7^4} - \cdots =$

(b)  $1 - x^2 + x^4 - x^6 + x^8 - x^{10} + \cdots =$

(c)  $x + \frac{x}{1-x} + \frac{x}{(1-x)^2} + \frac{x}{(1-x)^3} + \cdots =$