

Math 181
Fall 2009

Name _____

Homework #20

Due Wednesday, November 25
No late papers accepted! No excuses!

1. a) Use the Binomial Series to expand $\frac{1}{\sqrt{1-x^2}}$.
- b) Use part (a) to find the Maclaurin series for $\arcsin x$.

2. Find an equation of the sphere that passes through the point $(4,3,-1)$ and has center $(3,8,1)$.

3. Find a vector that has the same direction as $\langle -2,4,2 \rangle$ but has length 6.

4. Ropes 3 m and 5 m in length are fastened to a holiday decoration that is suspended over a town square. The decoration has a mass of 5 kg. The ropes, fastened at different heights, make angles of 52° and 40° with the horizontal. Find the tension in each wire and the magnitude of each tension.

