POWER SERIES WORKSHEET

APRIL 3, 2019

1. Determine the radius and interval of convergence for each of the following power series. (Don't forget to check the endpoints!)

   (a) $\sum_{n=0}^{\infty} n! x^n$

   (b) $\sum_{n=1}^{\infty} \frac{(x-3)^n}{n}$

   (c) $\sum_{n=0}^{\infty} \frac{n(x-2)^n}{3^{n+1}}$

   (d) $\sum_{n=0}^{\infty} \frac{(-3)^n x^n}{\sqrt{n+1}}$

2. Represent $\dfrac{x^4}{2+x^3}$ as a power series and find its interval of convergence.