Panel 14

Home work

See old HW, panels 2 and 3. Also do

① Find the radius of convergence for

a) $\sum_{n=0}^{\infty} (-1)^n z^n/(2n)!$ b) $\sum_{n=0}^{\infty} n!\, z^n$

c) $\sum_{n=0}^{\infty} \left(\frac{4n}{2n+1} - \frac{6n}{3n+4}\right)^n z^n$

d) $\sum_{n=0}^{\infty} \frac{n(n-1)}{(3+4i)^n} z^n$ e) $\sum_{n=0}^{\infty} \left(\frac{3n+7}{4n+2}\right)^n z^n$

f) $\sum_{n=0}^{\infty} \frac{n^n}{n!} z^n$ (hint: $\lim_{n\to\infty} \left(1+\frac{1}{n}\right)^n = e$)

② Can you have a power series $\sum c_n z^n$ that converges for $z_1 = 4-i$ but diverges at $z_2 = 2+3i$? Why or why not?