

Chapter 9.3 Practice worksheet.

SI math 166.

(9-1, 9-2, 9-3, 9-4, 9-5)

(Please ask for hints if you need to)

① determine whether the sequence converges or diverges
 (a) $a_n = (2n)^{1/2n}$ (b) n^2/e^{2n}

② Find the sum if it converges. $\sum_{k=1}^{\infty} \frac{4^{k+1}}{7^{k-1}}$

③ $\sum_{k=1}^{\infty} \frac{\tan^{-1} k}{1+k^2}$ converges or diverges? hint $\frac{d}{dx} \tan^{-1} x = \frac{1}{1+x^2}$

④ (a) $\sum_{n=1}^{\infty} \frac{5}{3^n + 1}$ (b) $\sum_{n=1}^{\infty} \frac{6 + 65n}{n^3}$

⑤ (a) $\sum_{n=2}^{\infty} (-1)^n \frac{1}{\sqrt{n^2-1}}$ (b) $\sum_{n=1}^{\infty} \frac{\sin(n\pi/2)}{n^2}$

Discussion:

~~1/1/1/1~~ discuss the difference between

conditionally convergent and absolutely (9-5) convergent

• intro to power series (9-6)