Calculus 2 - Unit 10 Part 1 REVIEW

Determine whether the series diverges or converges.

You must show a valid test and work to justify your answer.

#1) $\sum_{n=1}^{\infty}\left(\frac{2n^3+1}{n^3-1}\right)^n$

#2) $\sum_{n=1}^{\infty}\frac{8^n}{5^n}$

#3) $\sum_{n=1}^{\infty}\frac{3^n}{4^n-1}$

#4) $\sum_{n=1}^{\infty}\frac{n}{\ln(n)}$

#5) $\sum_{n=1}^{\infty}\frac{n!}{3^n}$

#6) $\sum_{n=1}^{\infty}\frac{1}{5^n+1}$

#7) $\sum_{n=1}^{\infty}\frac{4n}{2n^2+1}$

#8) $\sum_{n=1}^{\infty}\frac{2}{n^2}$

#9) $\sum_{n=1}^{\infty}\frac{2n^3}{n^3+4}$

#10) $\sum_{n=1}^{\infty}(-1)^n\frac{5n-1}{4n+1}$

#11) $\sum_{n=0}^{\infty}5\frac{2^n}{3^n}$

#12) $\sum_{n=1}^{\infty}\sin\left(\frac{(2n-1)\pi}{2}\right)$

#13) $\sum_{n=1}^{\infty}\frac{1}{5^n}$

#14) $\sum_{n=1}^{\infty}\frac{1}{2n-1}$

#15) $\sum_{n=1}^{\infty}\frac{\ln(n)}{n^2}$

#16) $\sum_{n=1}^{\infty}\frac{n}{n^2+1}$

#17) $\sum_{n=1}^{\infty}(-2)^n$

#18) $\sum_{n=1}^{\infty}\frac{5n^4}{n^4+n^2+7}$

#19) $\sum_{n=1}^{\infty}\frac{9^n}{n^5}$

#20) $\sum_{n=1}^{\infty}\frac{5}{n^{0.4}}$

#21) $\sum_{n=1}^{\infty}\left(\frac{n}{2n+1}\right)^n$

#22) $\sum_{n=1}^{\infty}(-1)^n\frac{1}{3^n}$

Determine whether the series converges absolutely, conditionally, or diverges:

#23) $\sum_{n=1}^{\infty} \frac{(-1)^{n+1}}{n!}$

#24) $\sum_{n=1}^{\infty} (-1)^{n+1} \frac{1}{\sqrt{n}}$

#25) $\sum_{n=1}^{\infty} (-1)^{n+1} \frac{n^2}{(n+1)^2}$

#26) Determine the minimum number of terms required to approximate the sum of the series $\sum_{n=1}^{\infty} (-1)^{n+1} \frac{1}{2n^3 - 1}$ with an error of less than 0.0005.