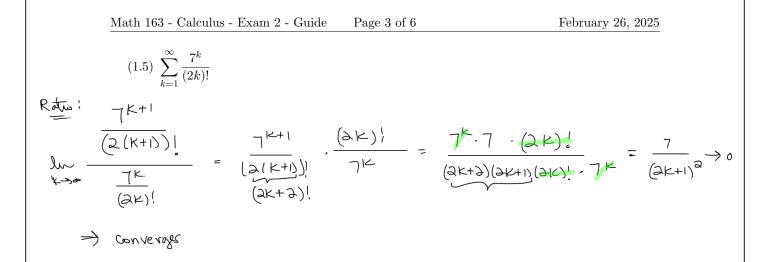
Math 163 - Calculus - Exam 2 - Guide February 26, 2025 Show your work to receive full credit.

1.(1.1) Indicate absolute convergence, conditional convergence or divergence  $\sum_{k=2}^{\infty} \frac{5k\sqrt{k}}{7k^3 + 5k + 1} = \frac{3}{3/2} \sum_{j=1,5}^{-1,5} = \frac{5}{7k^{3/2}}$ . |avge  $n \approx \frac{5k\sqrt{k}}{7k^3} = \frac{5k}{7k^3} = \frac{5}{7k^{3/2}}$ . Direct Companison  $\sum \frac{5}{7k^{3/2}}$  converges k/k it's  $r = p - service p = \frac{3}{2} > 1$   $\frac{3^{1/2}}{7k^3 + 5k + 1} < \frac{5}{7k^{3/2}} + k \ge 2$ Since the given series is bounded above by a

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convergent series, it too must converge (D.C.T.)

$$(1.2) \sum_{k=1}^{\infty} \frac{(-1)^{k}}{\sqrt[3]{2k+11}}$$
See  $(-1)^{k} \implies AH$ , serves  
A, S,T,  $(\sum_{k=1}^{n} \frac{AH}{\sqrt[3]{2k+11}}, \operatorname{is decreasing}, \operatorname{drach}_{3} \frac{1}{\sqrt[3]{2k+11}}, \operatorname{is decreasing}, \operatorname{drach}_{3} \frac{1}{\sqrt[3]{2k+11}}, \operatorname{drach}_{3} \frac{1}{\sqrt[3]{2k+11}}, \operatorname{drach}_{3} \frac{1}{\sqrt[3]{2k+11}}, \operatorname{drach}_{3} \frac{1}{\sqrt[3]{2k+11}}, \operatorname{drach}_{3} \frac{1}{\sqrt[3]{2k}}, \operatorname{drach}_{3} \frac{1}{\sqrt[3]{2k}}, \operatorname{drach}_{3} \frac{1}{\sqrt[3]{2k+11}}, \operatorname{drach}_{3} \frac{1}{\sqrt[3]{2k+11}}, \operatorname{drach}_{3} \frac{1}{\sqrt[3]{2k}}, \operatorname{drach}_{3} \frac{1}{\sqrt[3]{2k+11}}, \operatorname{drach}_{3} \frac{1}{\sqrt[3]{2k}}, \operatorname{drach}_{3} \frac{1}{\sqrt[3]{2k}}, \operatorname{drach}_{3} \frac{1}{\sqrt[3]{2k+11}}, \operatorname{drach}_{3} \frac{1}{\sqrt[$ 



Prove the following statement: (1.6) If  $\sum a_n$  converges, then  $\lim_{n \to +\infty} a_n = 0$