Math 132.5. Worksheet 2

Paul Hacking

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For each of the following series, determine if it is absolutely convergent, conditionally convergent, or divergent. State which tests you used and clearly show that the series meets the conditions to use these tests.

(1) F08Q3a

$$\sum_{n=1}^{\infty}(-1)^{n-1}\frac{3n^2+2n}{4n^2-5}$$

(2) S17Q3

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

(3) F17Q4

$$\sum_{n=1}^{\infty}\frac{\cos(n\pi)}{n^{3/2}}$$

(4) F17Q9a

$$\sum_{n=1}^{\infty}\frac{3^n(n+1)!}{(2n)!}$$

(5) S17Q7a

$$\sum_{n=1}^{\infty}\frac{3^{n-1}n^n}{5^{n+1}}$$

(6) S17Q7b

$$\sum_{n=1}^{\infty}(-1)^{n+1}\frac{7^{4n}(n+2)^6}{(2n)!}$$

(7) F17Q7b

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

(8) F17Q9b

$$\sum_{n=1}^{\infty} (-1)^n \frac{9}{n^{2/3} + \sqrt{n}}$$

(9) F16Q9a

$$\sum_{n=1}^{\infty} (-1)^n \frac{5}{2 + \ln n}$$