Math 132.5. Worksheet 1

Paul Hacking

November 2, 2018

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

(1) F16Q4

$$\sum_{n=1}^{\infty} \frac{7n}{8n+15}$$

(2) S15Q7b

$$\sum_{n=1}^{\infty} \frac{(\cos n)^2}{4^n}$$

(3) S07Q2a

$$\sum_{n=2}^{\infty} \frac{1}{n-\sqrt{n}}$$

(4) S17Q9a

$$\sum_{n=1}^{\infty} \frac{3^n}{\pi^n+2}$$

(5) S18Q9

$$\sum_{n=1}^{\infty} \frac{\tan^{-1} n}{n^2+6n}$$

(6) S18Q3

$$\sum_{n=1}^{\infty} \frac{8n^{11}}{n^{12}+7}$$

(7) F17Q8a

$$\sum_{n=1}^{\infty} \frac{n-2}{n^3-n^2+6}$$

(8) F16Q1

$$\sum_{n=1}^{\infty} \frac{n}{\sqrt{7n^3+45}}$$

(9) S18Q10

$$\sum_{n=2}^{\infty} \frac{1}{n \ln n}$$

[Hint: Use the integral test.]