

2022 Calculus BC or Calculus II Integral Test and P Series Test (Rokawski 10.3)

Lesson 338 | Calculus BC | Integral test and p-series

<https://www.youtube.com/watch?v=rWrkrHox4dw>

Original practice aligned to the saved video title.

Name: _____ Date: _____ Show your reasoning.

01

Determine whether $\sum$ from $m=1$ to ∞ of $9/m^{(3/12)}$ converges. Justify with the p-test.

02

Determine whether $\sum$ from $m=1$ to ∞ of $12/m^{(4/7)}$ converges. Justify with the p-test.

03

Determine whether $\sum$ from $m=1$ to ∞ of $3/m^{(7/2)}$ converges. Justify with the p-test.

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04Determine whether $\sum$ from $m=1$ to ∞ of $3/m^{(2/8)}$ converges. Justify with the p-test.**05**Determine whether $\sum$ from $m=1$ to ∞ of $4/m^{(2/7)}$ converges. Justify with the p-test.**06**Determine whether $\sum$ from $m=1$ to ∞ of $3/m^{(3/12)}$ converges. Justify with the p-test.

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01

Determine whether $\sum$ from $m=1$ to ∞ of $9/m^{(3/12)}$ converges. Justify with the p-test.

$p=1/4$. A p-series converges exactly when $p>1$. This series diverges; multiplying by 9 does not change convergence.

02

Determine whether $\sum$ from $m=1$ to ∞ of $12/m^{(4/7)}$ converges. Justify with the p-test.

$p=4/7$. A p-series converges exactly when $p>1$. This series diverges; multiplying by 12 does not change convergence.

03

Determine whether $\sum$ from $m=1$ to ∞ of $3/m^{(7/2)}$ converges. Justify with the p-test.

$p=7/2$. A p-series converges exactly when $p>1$. This series converges; multiplying by 3 does not change convergence.

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04

Determine whether $\sum$ from $m=1$ to ∞ of $3/m^{(2/8)}$ converges. Justify with the p-test.

$p=1/4$. A p-series converges exactly when $p>1$. This series diverges; multiplying by 3 does not change convergence.

05

Determine whether $\sum$ from $m=1$ to ∞ of $4/m^{(2/7)}$ converges. Justify with the p-test.

$p=2/7$. A p-series converges exactly when $p>1$. This series diverges; multiplying by 4 does not change convergence.

06

Determine whether $\sum$ from $m=1$ to ∞ of $3/m^{(3/12)}$ converges. Justify with the p-test.

$p=1/4$. A p-series converges exactly when $p>1$. This series diverges; multiplying by 3 does not change convergence.