

2022 Calculus BC Direct Comparison and Limit Comparison (Rokawski 10.3 2nd half)

Lesson 339 | Calculus BC | Comparison tests

<https://www.youtube.com/watch?v=yq-6ATyp1Is>

Original practice aligned to the saved video title.

Name: _____ Date: _____ Show your reasoning.

01

Test $\sum$ from $m=1$ to ∞ of $5/(2m^2+3)$ by limit comparison.

02

Test $\sum$ from $m=1$ to ∞ of $2/(3m^2+7)$ by limit comparison.

03

Test $\sum$ from $m=1$ to ∞ of $13/(11m^2+7)$ by limit comparison.

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04 Test $\sum$ from $m=1$ to ∞ of $14/(7m^2+8)$ by limit comparison.

05 Test $\sum$ from $m=1$ to ∞ of $3/(5m^2+7)$ by limit comparison.

06 Test $\sum$ from $m=1$ to ∞ of $5/(12m^2+7)$ by limit comparison.

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01 Test $\sum$ from $m=1$ to ∞ of $5/(2m^2+3)$ by limit comparison.

Compare with $1/m^2$. The ratio $5m^2/(2m^2+3)$ tends to $5/2$, finite and positive. Since $\sum 1/m^2$ converges, the given series converges.

02 Test $\sum$ from $m=1$ to ∞ of $2/(3m^2+7)$ by limit comparison.

Compare with $1/m^2$. The ratio $2m^2/(3m^2+7)$ tends to $2/3$, finite and positive. Since $\sum 1/m^2$ converges, the given series converges.

03 Test $\sum$ from $m=1$ to ∞ of $13/(11m^2+7)$ by limit comparison.

Compare with $1/m^2$. The ratio $13m^2/(11m^2+7)$ tends to $13/11$, finite and positive. Since $\sum 1/m^2$ converges, the given series converges.

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04 Test Σ from $m=1$ to ∞ of $14/(7m^2+8)$ by limit comparison.

Compare with $1/m^2$. The ratio $14m^2/(7m^2+8)$ tends to $14/7$, finite and positive. Since $\Sigma 1/m^2$ converges, the given series converges.

05 Test Σ from $m=1$ to ∞ of $3/(5m^2+7)$ by limit comparison.

Compare with $1/m^2$. The ratio $3m^2/(5m^2+7)$ tends to $3/5$, finite and positive. Since $\Sigma 1/m^2$ converges, the given series converges.

06 Test Σ from $m=1$ to ∞ of $5/(12m^2+7)$ by limit comparison.

Compare with $1/m^2$. The ratio $5m^2/(12m^2+7)$ tends to $5/12$, finite and positive. Since $\Sigma 1/m^2$ converges, the given series converges.