11.4 # 5 note! The series has positive terms

by LCT

Known series $\sum \frac{1}{\sqrt[3]{n^2}} = \sum \frac{1}{n^{2/3}}$ p-series $p = 2/3$ diverge

$$\lim_{n \to \infty} \frac{\frac{1}{\sqrt[3]{n^2-3}}}{\frac{1}{\sqrt[3]{n^2}}} = \lim_{n \to \infty} \frac{\sqrt[3]{n^2}}{\sqrt[3]{n^2-3}} = \lim_{n \to \infty} \sqrt[3]{\frac{n^2}{n^2-3}} = \sqrt[3]{1}$$

$$= 1$$

by LCT the series $\sum \frac{1}{\sqrt[3]{n^2-3}}$ will diverge.

By comparison test.

$n^2 - 3 < n^2$

$\sqrt[3]{n^2-3} < \sqrt[3]{n^2}$

$\frac{1}{\sqrt[3]{n^2-3}} > \frac{1}{\sqrt[3]{n^2}}$

$\sum \frac{1}{\sqrt[3]{n^2}}$ diverges since it is a p-series $p = 2/3$.

By comparison test

$\sum \frac{1}{\sqrt[3]{n^2-3}}$ will diverge