SECTION 5.4: COMPARISON TESTS PLUS
HINTS

A. $$\sum_{n=1}^{\infty} \frac{1}{n2^n}$$

Try a direct comparison to a geometric series.

B. $$\sum_{n=1}^{\infty} 2^n$$

Use the Divergence Test.

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

Try the limit comparison test to the geometric series $\sum (2/3)^n = \sum \frac{1}{(3/2)^n}$

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

Integral Test.

E. $$\sum_{n=1}^{\infty} \frac{n-4}{n^3+2n}$$

Limit comparison test to p-series with $p=2$.

F. $$\sum_{n=2}^{\infty} \frac{1+\cos(n)}{e^n}$$

Try a direct comparison to geometric series with terms $(2/e)^n$

G. $$\sum_{n=3}^{\infty} \frac{n^2}{\sqrt{n^3 - 1}}$$

Try a direct comparison to p-series with $p = -1/2$ or Integral Test or Divergence Test.

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

Try a direct comparison to p-series with $p = 5$ or Integral Test.

I. $$\sum_{n=1}^{\infty} (-1)^n 3^{-n/3}$$

This is a geometric series

J. $$\sum_{n=2}^{\infty} \frac{1}{n!}$$

Try a direct comparison test to p-series with $p = 2$. For what n-values does the comparison work the right way around??

K. $$\sum_{n=1}^{\infty} \frac{n}{n^2 + 1}$$

Integral Test

L. $$\sum_{n=2}^{\infty} \frac{5}{n^2 - 10}$$

Limit comparison to p-series with $p = 2$.