Math 152 - Test for Divergence Name: _____

Show all work clearly and in order. Please box your answers.

1. Use the **Test for Divergence** on each of the following to determine whether the given series diverges. If the test yields no conclusion, then write NO INFO. You must set up, evaluate, and interpret the correct limit to earn credit.

   (a) $\displaystyle\sum_{n=2}^{\infty} \frac{1}{n^3}$

   (b) $\displaystyle\sum_{n=1}^{\infty} \frac{1}{\sqrt{n}}$

   (c) $\displaystyle\sum_{n=3}^{\infty} \left(2 - \frac{1}{n}\right)$

   (d) $\displaystyle\sum_{n=1}^{\infty} \frac{n^2+1}{4n^2+1}$

   (e) $\displaystyle\sum_{n=3}^{\infty} \frac{n}{\ln(n)}$

   (f) $\displaystyle\sum_{n=3}^{\infty} \cos\left(\frac{1}{n}\right)$

   (g) $\displaystyle\sum_{n=3}^{\infty} \sin\left(\frac{1}{n}\right)$

   (h) $\displaystyle\sum_{n=3}^{\infty} \sin(n)$

   (i) $\displaystyle\sum_{n=3}^{\infty} \frac{\sin^2(n)}{n^3}$