AP Calculus BC
Convergence of Series

Name: _____ Date: _____

Apply the appropriate test to determine the convergence (or divergence) of each series.

1. $\sum_{n=1}^{\infty}\left(\frac{1}{n^2}+\left(\frac{3}{2}\right)^n\right)$

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

3. $\sum_{n=1}^{\infty}\frac{n\cdot 3^n}{2^n}$

4. $\sum_{n=1}^{\infty} \frac{4n^3+5}{7n^2-11n^3}$

5. $\sum_{n=1}^{\infty} \left(\frac{n^n}{3^n \cdot n!} \right)$

6. $\sum_{n=1}^{\infty} \frac{1+e^{-n^3}}{n}$

7. $\sum_{n=1}^{\infty} \frac{\ln n}{n^3}$

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

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

10. $\sum_{n=1}^{\infty} \frac{(-1)^{n+1}}{2^n}$

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

12. $\sum_{n=1}^{\infty} \frac{e^n}{(n)!}$