

Name: _____

(20 points total)

1. (12 points) Determine whether each of the following series converges or diverges. Show all work and state all convergence tests used.

(a)
$$\sum_{n=2}^{\infty} \frac{1}{n\sqrt{n-1}}$$

(b)
$$\sum_{n=1}^{\infty} 4 \left(\frac{5^n}{n!} \right)$$

2. (8 points) Determine whether each of the following series converges absolutely, converges conditionally, or diverges. Show all work and state all convergence tests used.

(a)
$$\sum_{n=2}^{\infty} (-1)^n \frac{2}{\sqrt{n}}$$

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