

**Do the following series converge or diverge?**

**If the series converges, approximate its value by computing  $S_{30}$**

1. 
$$\sum_{k=1}^{\infty} \frac{1}{3^k - k}$$

4. 
$$\sum_{k=3}^{\infty} \frac{\ln(k)}{k^3}$$

2. 
$$\sum_{k=5}^{\infty} \frac{k}{k^2 - 1}$$

5. 
$$\sum_{k=1}^{\infty} \frac{k!}{(k+2)!}$$

3. 
$$\sum_{k=3}^{\infty} \frac{\ln(k)}{k}$$