1. (5 pts each) Determine whether the series is convergent or divergent. If it is convergent, find its sum. If it is divergent, explain why.

$$(a) \sum_{n=0}^{\infty} \frac{2^n}{3^{n+1}}$$

(b) 
$$\sum_{n=1}^{\infty} \frac{(-1)^n}{\sqrt[n]{n}}$$

(c) 
$$\sum_{n=0}^{\infty} \frac{1 + (-1)^n}{2^n}$$

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