

## The rest of the problems for Section 11.4

For each of the following, give an argument to determine if the infinite series converges or diverges.

6. 
$$\sum_{k=1}^{\infty} \frac{1}{k^2 + \sqrt{k}}$$

7. 
$$\sum_{j=1}^{\infty} \frac{j}{(j^2 + 1)^2}$$

8. 
$$\sum_{j=2}^{\infty} \frac{1}{\sqrt[3]{j^2 - 1}}$$

9. 
$$\sum_{k=1}^{\infty} \frac{\sqrt{k}}{k^2 + k + 1}$$

10. 
$$\sum_{k=0}^{\infty} e^{-k}$$

11. 
$$\sum_{m=0}^{\infty} e^{-m^2}$$

12. 
$$\sum_{k=2}^{\infty} \frac{1}{k \ln k}$$

13. 
$$\sum_{k=0}^{\infty} \frac{k!}{(k+2)!}$$

14. 
$$\sum_{k=0}^{\infty} \frac{k!}{(2k)!}$$

15. 
$$\sum_{m=2}^{\infty} \frac{m^3}{m^4 - 7}$$

16. 
$$\sum_{k=1}^{\infty} \frac{\cos k}{k^3}$$

17. 
$$\sum_{k=1}^{\infty} \frac{(-1)^k}{k^3}$$

18. 
$$\sum_{k=2}^{\infty} (-1)^k \frac{\ln k}{k}$$