Determine whether the following series converge or diverge. If it converges, does it converge absolutely or conditionally? If possible, find the sum.

(1) 
$$\sum_{n=1}^{\infty} \frac{n^2 + 1}{n^5 - n^2 \sqrt{3}}$$

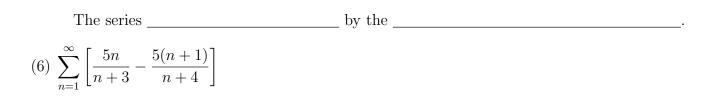
The series \_\_\_\_\_\_ by the \_\_\_\_\_\_.

(2)  $\sum_{n=1}^{\infty} \frac{n^2 - 1}{n^3 + 100}$ 

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

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





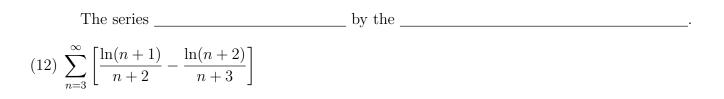
$$(7) \sum_{n=1}^{\infty} \frac{\sin(n^2)}{n^2}$$

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

(9) 
$$\sum_{n=1}^{\infty} \frac{(n!)^n}{n^{2n}}$$

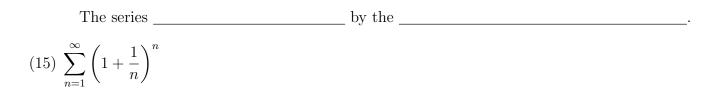
(10) 
$$\sum_{n=1}^{\infty} \left(\frac{2^{n+1}}{2^n+1}\right)^n$$

(11) 
$$\sum_{n=0}^{\infty} \frac{3+2^n}{\pi^{n+1}}$$



(13) 
$$\sum_{n=1}^{\infty} \frac{2^{n+1}}{3(n!)}$$

(14) 
$$\sum_{n=1}^{\infty} \frac{2^{2n}}{3 \cdot 5^{n-1}}$$



(16) 
$$\sum_{n=1}^{\infty} \frac{(-1)^{n-1}}{n^2}$$

(17) 
$$\sum_{n=1}^{\infty} \frac{(-1)^n}{\sqrt{n+1}}$$

(18) 
$$\sum_{n=1}^{\infty} \frac{(n+1)!}{n^2 e^n}$$