Convergence of Series I - Worksheet

1. Find the nth partial sum for the series $3+2-2+2-2+\ldots$.

2. Does the series $3+2-2+2-2+\ldots$ converge? Why?

3. Does the series $6+3+\frac{3}{2}+\frac{3}{2^2}+\ldots$ converge? If so, find the sum.

4. Does the series $-5+\frac{5}{2}-\frac{5}{3}+\frac{5}{4}-1+\ldots$ converge? If so, find the sum.

5. Does the series $\sum_{n=0}^{1,578,993,21} ne^{n^2}$ converge? Why?

6. Does the series $\sum_{n=10}^{\infty} \frac{3n^3+2}{2n^3-1}$ converge? Why?

7. Find the mth partial sum for the series $\sum_{n=2}^{\infty} \frac{1}{n^2-1}$.

8. Does the series $\sum_{n=2}^{\infty} \frac{1}{n^2-1}$ converge? Why?

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9. Does $\sum_{n=1}^{\infty} \frac{(-1)^n}{n^2} + e^{-n}$ convergent? Why?

10. Does the series $\sum_{n=1}^{\infty} n\sin\left(\frac{1}{n}\right)$ converge? Why?
