

Convergent and Divergent Series
Pre-Calculus

Name _____
Class period _____

Determine whether each series is convergent or divergent. Explain your choice.

1) $2 + 3 + \frac{9}{2} + \dots$

2) $5 + (-1) + (-7) + \dots$

3) $\frac{1}{2} + \frac{5}{8} + \frac{3}{4} + \frac{7}{8} + \dots$

4) $4 + \frac{8}{3} + \frac{16}{9} + \dots$

Use the ratio test to determine whether each series is convergent or divergent.

5) $10 + \frac{100}{4} + \frac{1000}{27} + \dots$

6) $2 + \frac{2}{8} + \frac{2}{27} + \dots$

7) $3 + \frac{9}{4} + \frac{27}{9} + \dots$

8) $\frac{1}{2} + \frac{1}{4} + \frac{1}{8} + \dots$

9) $1 + \frac{1 \cdot 2}{4} + \frac{1 \cdot 2 \cdot 3}{27} + \dots$

10) $3 + \frac{9}{1 \cdot 2} + \frac{27}{1 \cdot 2 \cdot 3} + \dots$

11) $\frac{4}{2} + \frac{7}{4} + \frac{10}{8} + \dots$

12) $\frac{3}{2} + \frac{9}{5} + \frac{27}{10} + \dots$