

9.1 and 9.2 Group Work Target Practice

For sequences EXPLAIN or SHOW WORK documenting why your answer is correct:

- (a) does it converge or diverge, and why
- (b) what is the limit if it converges?
- (c) show work for L'Hôpital's Rule if it applies.

For series EXPLAIN or SHOW WORK documenting why your answer is correct:

- (a) fully document why the geometric series test works, including any assumptions
- (b) specify whether the series converges or diverges, and why

(a) $s_n = \frac{n}{10} + \frac{10}{n}$.

Circle one: sequence series document as directed above

- (b) Suppose the government proposes a tax cut totaling 100 million. For the sake of a theoretical analysis, assume that the receivers spend 80% of it and save 20%. Of the extra income generated by the tax cut, 100(.8) million = 80 million is spent and then becomes extra income to someone else. Assume 80% of this is also spent, or 80(.8) million, and so on. Calculate the total additional spending theoretically created by such a tax cut.

Circle one: sequence series document as directed above

- (c) Once a day, eight new tons of pollutants are dumped into a bay. Of the amount in the bay, 25% is removed by natural processes each day (before the next dumping). What happens to the quantity of pollutants after 100 days?

Circle one: sequence series document as directed above

(d) $s_n = \frac{(-1)^n}{n}$

Circle one: sequence series document as directed above