**AP Questions 9.1 – 9.6** Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

$$\sum\_{n=0}^{\infty }\frac{2+3^{n}}{5^{n}}$$

1) What is the sum of the series

(A) 15/4 (B) 25/6 (C) 9/2 (D) 5 (E) Divergent

$$\sum\_{n=2}^{\infty }\frac{3}{5^{n}}=$$

2)

(A) 3/20 (B) 9/20 (C) 9/10 (D)5/2 (E) 15/4

$$\sum\_{n=1}^{\infty }\left(\frac{1}{2}\right)^{2n}=$$

3)

(A) 1/3 (B) ½ (C) 1 (D) 2 (E) Infinity

4) Which of the following are true statements?

 I. If converges conditionally, then converges.

 II. If converges, then converges.

 III. If , then converges

(A) I only

(B) II only

(C) I and II only

(D) II and III only

(E) I, II, and III

5) The sum of the infinite geometric series is

(A)-6 (B) -3 (C) 0 (D)3/7 (E) 3/2

6) Which of the following series are convergent?

 I. 

 II. 

 III. 

(A) None (B) II only (C) III only (D) I and II (E) I and III

7) Which of the following functions grow faster than  as ?

(A) x4 (B) lnx (C)  (D)  (E) 

8) Let an, bn, and cn be sequences of positive numbers such that for all positive intergers n, an ≤ bn ≤ cn. If converges, then which of the following statements must be true?

 I. converges

 II. converges

 III. converges

(A) I only (B) II only (C) III only (D) I and III only (E) I, II, and III