NAME:_____

Find the sum of the geometric series:

1. $0.7 + 0.07 + 0.007 + \ldots$ [A] 0.777 [B] $\frac{7}{10}$ [C] $\frac{7}{9}$ [D] 0.021

2. $0.8 + 0.08 + 0.008 + \ldots$ [A] 0.888 [B] 0.024 [C] $\frac{4}{5}$ [D] $\frac{8}{9}$

3. $\frac{3}{2} + \frac{3}{4} + \frac{3}{8} + \ldots$ [A] 3 [B] 2 [C] 1 [D] none of these

4. $-1 - \frac{1}{2} - \frac{1}{4} - \ldots$ [A] -2 [B] none of these [C] $-\frac{4}{3}$ [D] -4

5. $\frac{2}{3} - \frac{1}{3} + \frac{1}{6} - \ldots$ [A] $\frac{4}{3}$ [B] $\frac{8}{9}$ [C] none of these [D] $\frac{4}{9}$

6. Compare the quantity in Column A with the quantity in Column B.

Column A	Column B
$\sum_{n=1}^{\infty} 4\left(\frac{1}{2}\right)^n$	$\sum_{n=1}^{\infty} 4\left(\frac{1}{8}\right)^n$

[A] The quantity in Column A is greater. [B] The quantity in Column B is greater.

[C] The two quantities are equal.

[D] The relationship cannot be determined on the basis of the information supplied.

7. Create an infinite geometric series that converges to -2.

8. Graph the function $S(n) = \frac{5(1-0.6^n)}{(1-0.6)}$ on a graphing calculator.

a. Find the value of the function for $n = 8$.
b. What value does the function approach?

[1] C

[2] D

[3] A

[4] A

[5] D

[6] A

[7] Answers may vary. Sample: $-1.8+(-0.18)+(-0.018)+(-0.0018)+\ldots$

[8] a. 12.3
b. 12.5