NAME:_____

Find the sum of the geometric series:

1. 0.7 + 0.07 + 0.007 + ...

    [A] 0.777   [B] $\frac{7}{10}$ [C] $\frac{7}{9}$ [D] 0.021

2. 0.2 + 0.02 + 0.002 + ...

    [A] $\frac{1}{5}$ [B] 0.222   [C] 0.006   [D] $\frac{2}{9}$

3. 0.5 + 0.05 + 0.005 + ...

    [A] $\frac{5}{9}$ [B] 0.555   [C] 0.015   [D] $\frac{1}{2}$

4. 0.8 + 0.08 + 0.008 + ...

    [A] 0.888   [B] 0.024   [C] $\frac{4}{5}$ [D] $\frac{8}{9}$

5. $\frac{3}{2}$ + $\frac{3}{4}$ + $\frac{3}{8}$ + ...

    [A] 3   [B] 2   [C] 1   [D] none of these

6. $-1 - \frac{1}{2} - \frac{1}{4} - ...$

    [A] −2   [B] none of these

    [C] $-\frac{4}{3}$ [D] −4

7. $\frac{2}{3} - \frac{1}{3} + \frac{1}{6} - ...$

    [A] $\frac{4}{3}$ [B] $\frac{8}{9}$

    [C] none of these   [D] $\frac{4}{9}$

8. 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.

9. Create an infinite geometric series that converges to −2.

10. Graph the function $S(n) = \dfrac{5(1 - 0.6^{n})}{(1 - 0.6)}$ 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] D

[5] A

[6] A

[7] D

[8] A

Answers may vary. Sample:
[9] $-1.8+(-0.18)+(-0.018)+(-0.0018)+....$

a. 12.3
[10] b. 12.5