EMCF 23

Log into CourseWare at http://www.casa.uh.edu
and access the answer sheet by clicking on the EMCF tab.

NOTE: On all problems, choice F is "None of the above".

1. The general term for the sequence 1, 1/8, 1/27, 1/64, . . . is

   A. $\frac{1}{n^3}$ B. $\frac{1}{n^2}$ C. $\frac{1}{3n}$ D. $\sqrt[3]{n}$ E. $\frac{1}{n}$

2. $\left\{\frac{n^3}{n+1}\right\}_{n=1}^{\infty}$ converges (i.e. has a limit)

   A. True B. False

3. $\left\{\frac{3n+1}{2n+5}\right\}_{n=1}^{\infty}$ converges

   A. True B. False

4. $\left\{\frac{1}{n^3}+5\right\}_{n=1}^{\infty}$ converges

   A. True B. False

5. $\{sin(n\pi)\}_{n=1}^{\infty}$ converges

   A. True B. False

6. $\{cos(n\pi)\}_{n=1}^{\infty}$ converges

   A. True B. False

7. If the sequence converges, find its limit. If it does not converge, answer diverges.
$\left\{(-1)e^n\right\}_{n=1}^{\infty}$

A. 0
B. 1/e
C. –e
D. Diverges
E. e

8. If the sequence converges, find its limit. If it does not converge, answer diverges.
$\left\{\frac{3n}{4^n}\right\}_{n=1}^{\infty}$

A. 3/4
B. 3
C. 0
D. Diverges
E. Cannot be determined

9. If the sequence converges, find its limit. If it does not converge, answer diverges.
$\left\{\frac{6n}{n^2-2n+5}\right\}_{n=1}^{\infty}$

A. 0
B. 1
C. 3
D. Diverges
E. –3

10. If the sequence converges, find its limit. If it does not converge, answer diverges.
$\left\{\frac{4n+5}{8n}\right\}_{n=1}^{\infty}$

A. 2
B. 0
C. 1/2
D. Diverges
E. 4