Solution to Practice for Exam 3.

1.

A. Converges (alternating series test.)

B. Converges (ratio test)

C. Diverges (ratio test)

D. Converges (comparison test and geometric series)

E. Converges (comparison test and integral test or comparison test and limit comparison test)

F. Converges (integral test)

2.

A. 1

B. $2 \leq x < 4$

3.

A. 0

B. $\{0\}$

4. $Cn = \frac{(x-3)^n}{2^{n-1}n!}$ for $n \geq 1$

5.

A. ∞

B. all real numbers

6. -24

7.

A. $\sin(x) \approx P_3(x) = x - \frac{x^3}{3!} + \frac{x^5}{5!}$

B. $\frac{1}{5!}$

8.

A. $s_n = \frac{(-1)^{n-1}}{2n+1}$, $n \geq 1$

B. $s_n = \frac{13}{4n+1}$, $n \geq 1$

9.
A. $S = \frac{4}{1--\frac{1}{2}} = \frac{8}{3}$

B. Sum does not exists

10.
A. $\frac{\frac{2}{9}[1-(\frac{1}{3})^7]}{1-\frac{1}{3}} = \frac{3^7-1}{3^8}$

B. $S = \frac{\frac{2}{3}}{1-\frac{1}{3}} = 1$

11. $\frac{3}{5}$