

Math 222 Exam 2 Review Solutions

Problem 1

- (a) Converges to e^3
- (b) Diverges
- (c) Converges to 0
- (d) Converges to 0
- (e) Converges to $\frac{1}{\sqrt{3}}$

Problem 2

- (a) Converges to $-5/8$
- (b) Diverges
- (c) Converges to $1/2$

Problem 3

- (a) Converges
- (b) Converges
- (c) Diverges
- (d) Converges
- (e) Diverges

Problem 4

- (a) Converges absolutely
- (b) Diverges

- (c) Converges conditionally

Problem 5

Converges to $\frac{1}{1-e^x}$ on the interval $-\infty < x < 0$

Problem 6

- (a) $\{0\}$
- (b) $0 \leq x < 2$

Problem 7

$$\sum_{n=1}^{\infty} nx^n$$

Problem 8

- (a) $P_3(x) = \frac{\pi}{2} + (x - \frac{\pi}{2}) - \frac{\pi}{4}(x - \frac{\pi}{2})^2 - \frac{1}{2}(x - \frac{\pi}{2})^3$
- (b) $P_3(x) = (x - 1)^2 - (x - 1)^3$

Problem 9

$$\sum_{n=0}^{\infty} (-1)^n \frac{x^{2n+1}}{n!}$$

Problem 10

0

Problem 11

$$\frac{(0.2)^4}{24}$$