

Answers to Practice Exam 4 for the Second Midterm

1.

$$\sum_{n=1}^{\infty} \left(-\frac{7}{9}\right)^n = \boxed{-\frac{7}{16}}$$

2. The Taylor series for $f(x) = \sin^2 x$ at $a = \frac{\pi}{2}$ is

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

3. The series converges.

4. The series converges.

5. The series converges absolutely.

6. The interval of convergence for this series is $(-\infty, \infty)$. You could have also written \mathbb{R} , or “all real numbers,” or “the entire real line.”