Student: Arfaz Hossain	**Instructor:** Muhammad Awais	**Assignment:** HW-7 [Sections 10.7 & 10.8]
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10. **(a)** Find the series' radius and interval of convergence. Find the values of x for which the series converges **(b)** absolutely and **(c)** conditionally.

$$\sum_{n=1}^{\infty} \frac{(8x-5)^{2n+1}}{n^{3/2}}$$

(a) The radius of convergence is $\frac{1}{8}$.

(Simplify your answer.)

Determine the interval of convergence. Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- **A.** The interval of convergence is $\frac{1}{2} \le x \le \frac{3}{4}$.
  (Type a compound inequality. Simplify your answer. Use integers or fractions for any numbers in the expression.)
- **B.** The series converges only at x = _____. (Type an integer or a simplified fraction.)
- **C.** The series converges for all values of x.

(b) For what values of x does the series converge absolutely?

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- **A.** The series converges absolutely for $\frac{1}{2} \le x \le \frac{3}{4}$.
  (Type a compound inequality. Simplify your answer. Use integers or fractions for any numbers in the expression.)
- **B.** The series converges absolutely at x = _____. (Type an integer or a simplified fraction.)
- **C.** The series converges absolutely for all values of x.

(c) For what values of x does the series converge conditionally?

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- **A.** The series converges conditionally for _____.
  (Type a compound inequality. Simplify your answer. Use integers or fractions for any numbers in the expression.)
- **B.** The series converges conditionally at x = _____.
  (Type an integer or a simplified fraction. Use a comma to separate answers as needed.)
- **C.** There are no values of x for which the series converges conditionally.