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2. Consider the series $\sum_{n=0}^{\infty} (-1)^n(7x+8)^n$.

(a) Find the series' radius and interval of convergence.
(b) For what values of x does the series converge absolutely?
(c) For what values of x does the series converge conditionally?

(a) Find the interval of convergence.

$-\frac{9}{7} < x < -1$

Find the radius of convergence.

$R = \frac{1}{7}$

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

$-\frac{9}{7} < x < -1$

(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 at x = _____.
  (Use a comma to separate answers as needed.)
- **B.** The series does not converge conditionally.