1. [11 points]

a. [7 points] Determine the **radius** of convergence of the following power series:

$$\sum_{n=1}^{\infty} \frac{9^n (x-2)^{2n}}{n^2}$$

Be sure to show all of your work. Write your final answer in the space provided below.

Answer: _____.

b. [4 points] Suppose that the power series

$$\sum_{n=1}^{\infty} a_n (x-5)^n$$

converges when $x = 10$ and diverges when $x = -1$. At which of the following x-values must the series converge? Circle your answers. You do not need to show any work for this problem.

-5 0 2 5 11 12