Quiz #10

1. **(a)** **(4 points)** Find the Taylor Series for the function $f(x) = \dfrac{1}{1+x}$ around the point $a = 3$. Express your final answer using sigma (Σ) notation, and clearly indicate your final answer.

FINAL ANSWER:

$$\sum$$

(b) **(2 points)** Find the **radius** of convergence of the Taylor Series for the function $f(x) = \dfrac{1}{1+x}$ around the point $a = 3$.

2. Consider the power series defined below.

$$1+\frac{2}{7^2}(x-3)+\frac{4}{7^3}(x-3)^2+\frac{8}{7^4}(x-3)^3+\frac{16}{7^5}(x-3)^4+\frac{32}{7^6}(x-3)^5+\ldots$$

(a) **(2 points)** Write out the sigma notation for this power series.

$$\sum$$

(b) **(2 points)** Determine the **interval of convergence** for this power series. Be sure to show your work. (Continue your work on the back of this sheet of paper if necessary, but write your final answer in the space provided below.)

FINAL ANSWER: