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| Show your work in the space provided.<br>Use the back of the page if necessary. |
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Name: \_\_\_\_\_

1. (4 points) Let  $f(x) = x^{x^{x^{\dots}}}$ . Find the derivative  $f'(x)$ .

2. (4 points) Let  $g(x) = \sqrt{x + \sqrt{x + \sqrt{x + \sqrt{x + \dots}}}}$ . Find the derivative  $g'(x)$ .

3. (2 points) Would Maple be a useful tool in solving either of the above problems?