

## MaClaurin Series

For each Geometric function given do the following:

- |    |                                    |    |  |
|----|------------------------------------|----|--|
| a. | Write the first 4 terms            | b. | Write the general term for the series          |
| c. | Write the power series             | d. | Find the interval of convergence               |
| e. | Take the derivative of the series. | e. | Take the antiderivative of the <b>series</b> . |

1.  $f(x) = \frac{x}{1-x^2}$

2.  $f(x) = \frac{x^3}{1+x^4}$

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1.  $f(x) = x \cos(x^2)$

2.  $f(x) = x^2 \sin(x^3)$

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1.  $f(x) = \ln(1 + x^3)$

2.  $f(x) = \ln(1 - x^2)$

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1.  $f(x) = xe^{x^2}$

2.  $f(x) = x^4e^{x^5}$

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1.  $f(x) = \tan^{-1}(x^5)$

2.  $f(x) = x \tan^{-1}(x^2)$