

Taylor/Maclaurin Series and Taylor Polynomials

Example 1:

Write the third-degree Taylor Polynomial for $f(x) = e^{-x}$.

Example 2:

Write the Taylor Series, centered at $x = 0$, for $g(x) = \frac{x}{3x-1}$.

Example 3:

Write the Taylor Series for $h(x) = \sin x$, centered at $x = \frac{3\pi}{2}$.

Example 4:

Write the Taylor Polynomial for $f(x) = 7x^2 - 6x + 1$ about $x = 2$.

Now you try...

1) Write the Taylor Polynomial of order 7 for $f(x) = \sin(3x)$.

2) Write the Taylor Series, centered at $x = 0$, for $g(x) = x^6 e^{2x^3}$.

3) Write the Taylor Series for $h(x) = \frac{1}{x^2}$, centered at $x = -1$.

4) Write the Taylor Polynomial for $f(x) = x^3 - 5x^2 - 1$ about $x = 3$.